JPRS 77907

22 April 1981

Worldwide Report

ENVIRONMENTAL QUALITY

No. 302

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CONTENTS

ASIA

AUSTRALIA

Free Treatment Offered to Vet Agent Orange Victims
(THE COURIER-MAIL, 15 Jan 81)..... 1

DDT Residue Found in Local Cigarettes
(THE SYDNEY MORNING HERALD, 16 Jan 81)..... 2

Opposition Raps Lack of Planning in Resources Boom
(THE WEST AUSTRALIAN, 26 Feb 81)..... 3

Salinity, Erosion Wiping Out Vast Agricultural Lands
(THE WEST AUSTRALIAN, 21 Feb 81)..... 5

Problems in West, by Michael Zekulich
State Control Rights
National Impact

Crop Spraying Destroys Commercial Bee Hives
(THE WEST AUSTRALIAN, 6 Jan 81)..... 8

Dangers to Coastal Fish Population Enumerated
(THE WEST AUSTRALIAN, 2 Mar 81)..... 10

Phosphorous Buildup Produces Algae Problems
(Michael Sinclair-Jones; THE WEST AUSTRALIAN, 17 Jan 81)..... 12

Corio Bay Seabed Barren; Pollution Probe Requested
(Andrew Woodley; THE AUSTRALIAN, 17 Feb 81)..... 15

Ramifications in U.S. Court Case To Halt Alcoa Mining
(THE WEST AUSTRALIAN, 2 Mar 81)..... 16

Lead-Free Gasoline Recommended for Nationwide Use
(THE WEEKEND AUSTRALIAN, 10-11 Jan 81, THE SYDNEY MORNING HERALD, 12 Jan 81)..... 19

Cost Factors, by Kevin Love
Industry Objections

WA Government OK's Oil Search Against EPA Wishes
(Paul Murray; THE WEST AUSTRALIAN, 24 Jan 81)..... 22

Briefs
Scrub Fires 23

INDIA

Parliament Approves Antipollution Bill
(PATRIOT, 26 Feb 81)..... 24

Press Discusses Dilemma in Correlating Conservation With Growing Demands
(THE HINDU, 27 Feb, 2 Mar 81)..... 25

Seminar on Water Problems, Use Held in Bombay
(THE TIMES OF INDIA, 28 Feb 81)..... 29

Minister Says Hill Ecosystems To Be Restored
(THE TIMES OF INDIA, 1 Mar 81)..... 31

PEOPLE'S REPUBLIC OF CHINA

Environmental Protection Stressed During Readjustment
(GUANGMING RIBAO, 20 Jan 81)..... 33

Briefs
Environmental Protection 35
Environmental Work Conference 35
Environmental Protection Forum 35
Yunnan Nature Preserves' Expansion 35
Environmental Engineering Society 36
Copper Plant Pollution Control 36
New Ultrapure Hydrogen Generator 36
Zhejiang Antipollution Regulations 37

EAST EUROPE

POLAND

Pollution of Urban Air, Baltic Sea Described
(GLOS PRACY, 23 Feb 81, RYNKI ZAGRANICZNE, 23 Feb 81)..... 38

Silesian Urban Situation, by Jadwiga Lorens
Baltic Sea Pollution, by Maria Strek

LATIN AMERICA

INTER-AMERICAN AFFAIRS

Fish Kills Show Need for Area-Wide Environmental Plan
(Trevor Yearwood; TRINIDAD GUARDIAN, 13 Jan 81)..... 43

BAHAMAS

SDP Seeks Assurances on Toxic Waste Dumping by U.S.
(THE TRIBUNE, 16 Jan 81)..... 45

BARBADOS

Lines Drawn in Battle Over Undeveloped Beaches
(ADVOCATE-NEWS, 17 Jan 81)..... 47

JAMAICA

Official Calls for Environmental Reorganization
(THE DAILY GLEANER, 19 Jan 81)..... 48

Residents Protesting Dust Halt Alcoa Plant Operations
(THE DAILY GLEANER, 13, 17 Jan 81)..... 51

Clarendon Blockade
Editorial Comment

PARAGUAY

Risks of Serious Contamination to Paraguay River
(Santiago Leguizamon; HOY, 13 Apr 81)..... 53

ST LUCIA

Briefs
Conservation Association 54

TRINIDAD AND TOBAGO

Briefs
Oil Pipeline Spill 55

NEAR EAST AND NORTH AFRICA

KUWAIT

Pollution Big Threat to Gulf
(SOUTH CHINA MORNING POST, 18 Mar 81)..... 56

SUB-SAHARAN AFRICA

ETHIOPIA

Briefs

Wollo Region Rain Damage 58
Reforestation Activities 58

NAMIBIA

Tsumeb Corporation Answers Questions on Harmful Substances
(WINDHOEK OBSERVER, 28 Mar 81)..... 59

NIGERIA

Rainfall Makes Hundreds Homeless in Ilorin
(Olu Omole; NEW NIGERIAN, 25 Mar 81)..... 61

USSR

Physician Describes Pollution's Effect on Human Organism
(O. Tamm; SOVETSKAYA ESTONIYA, 6 Feb 81)..... 62

Harmonious Interaction by Man, Nature Defined
(Yu. Israel'; IZVESTIYA, 7 Feb 81)..... 65

Coastline Conservation Plans Outlined
(V. Zenkovich, A. Kiknadze; ZARYA VOSTOKA, 18 Feb 81)..... 69

Clean Air Control Discussed in Minsk
(I. Seredich; SOVETSKAYA BELORUSSIYA, 19 Feb 81)..... 72

WEST EUROPE

GREECE

Mesolongion Area Residents Oppose New Petrochemical Plant
(Giorges Vidalis; ELEVTHEROTYPIA, 18 Mar 81)..... 80

FREE TREATMENT OFFERED TO VET AGENT ORANGE VICTIMS

Brisbane THE COURIER-MAIL in English 15 Jan 81 p 12

[Text] Melbourne--Vietnam veterans will be given free hospital treatment for symptoms they believe were caused by exposure to defoliants during the war.

This was announced yesterday by the Veterans' Affairs Minister, Senator Messner, who said the government recognised the physical and psychological disabilities suffered by the veterans.

Senator Messner detailed a new counselling service for veterans, staffed by professionally qualified officers, in each capital city.

But the Vietnam Veterans' Association said the new measures were only a small step in the right direction.

The association national president Mr Holt McMinn, said it would continue to push for an independent judicial inquiry into defoliant-related illnesses.

Senator Messner said the free medical attention would be given to "urgent cases", determined by a medical investigation involving department doctors.

They would have access to departmental institutions if medical investigations indicated that the condition required urgent medical treatment and there was a spare bed in repatriation hospitals, he said.

If beds were not available, accommodation would be sought in other hospitals. The arrangements would be reviewed in 12 months, he said.

Senator Messner said the government had taken the action because of recent reports that a number of Vietnam veterans were seriously ill as a result of their service in Vietnam and that their emotional states of mind put their lives at risk.

As well as the government's scientific investigation into the alleged link between disabilities and exposure to herbicides, Senator Messner said a pilot study would be conducted.

The study would start in Sydney in March. It would involve 300 veterans and their wives and children, and 300 soldiers who did not go to Vietnam.

The results of the government's major study are expected to be available in March next year.

CSO: 5000

DDT RESIDUE FOUND IN LOCAL CIGARETTES

Sydney THE SYDNEY MORNING HERALD in English 16 Jan 81 p 10

[Text]

Federal Government scientists have found DDT residue in Australian cigarettes but the report if their findings has not been made public.

Three of the most popular brands contained from 20.5 to 24.6 micrograms of DDT residue per cigarette, while examples of the same brand made in New Zealand and the United States had no residue.

The testers assumed one cigarette to contain one gram of tobacco.

The Australian Government Analytical Labortories in Melbourne did the tests over the past two years.

When the Herald asked about the tests the Minister for Health, Mr Mackellar, said some tests had been done on a few brands and the results were "probably indicative only."

Cigarette manufacturers say they do not use pesticides and a growers' spokesman said last night that DDT was no longer used.

Mr John Lewis, secretary of the North Queensland Tobacco Growers' Co-operative 9ssociation, which covers NSW growers as well, said the use of DDT was stopped five years ago.

"We don't stock it and we don't supply it to our growers and you can't buy it," Mr Lewis said.

DDT has never been proved to be harmful to man, but Dr John Pollak, a biochemist and spokesman for the Total Environment Centre's toxic and hazardous chemicals committee, said that on burning, DDT might produce some extremely toxic substances.

The committee believes that all organochorine pesticides, of which DDT is one, may be a public heath risk and should be banned.

"One of the main risks caused by organochlorine pesticides is that on burning or combustion they give rise to some of the most poisonous or toxic substances known to man, such as dioxins and chlorinated dibenzofurans," Dr Polak explained last night.

Dr Gordon Sarfaty, director of the NSW State Cancer Council, said the United States Surgeon-General had cited DDT as a harmful constituent of cigarettes.

In the light of the ocal tests, he said, assurances by the tobacco industry that no toxic substances were present in cigarette smoke were not credible.

"Since products for human consumption are monitored for toxic substances, so should tobacco products be consistently analysed by the health authorities."

Dr Sarfaty said he understood that tobacco stored in bond was fumigated to kill pests and this could account for the level of DDT found in the cigarettes.

The Australian Consumers' Association said yesterday that "the suppression of this data seems to be a payoff to the tobacco growers who were reported to have secured guarantees of protection before the last Federal election."

A senior Canberra scientist said Australia was one of the few countries which permitted DDT to be used on tobacco crops. DDT spraying on cotton crops will be banned from the end of June.

CSO: 5000

OPPOSITION RAPS LACK OF PLANNING IN RESOURCES BOOM

Perth THE WEST AUSTRALIAN in English 26 Feb 81 p 24

> [Text] Canberra: A lack of Government planning for Australia's resources boom was creating "dark satanic mills of the 20th century," the Senate Opposition Leader, Senator John Button, said in Parliament yesterday.

The areas singled out by Senator Button included Gladstone in Queensland, the Latrobe Valley in Victoria, the Hunter Valley in New South Wales, Portland in western Victoria and the Roxby Downs area in South Australia.

These were the areas marked down for development and growth as a result of "resource drainage," he said during debate on his motion criticising the lack of Government planning.

Senator Button mentioned Gladstone in Queensland as having some of the worst problems associated with the resources boom.

He said that Gladstone had already been through one boom and was now going through another.

"When one looks at the consequences and the effects of this development on the people of Gladstone there are some important questions to be asked about the role of governments in delivering community services," he said.

"Since the first industrial boom began at Gladstone in the 1960s no contribution either private or government has been made to the city's infrastructure needs. Ratepayers have had to foot the bill entirely," Senator Button said.

Senator Button said that:
--Average rates had risen by 164 per cent in seven years and by more than 14 per cent last year.
--Sewage treatment was at capacity, the water supply was inadequate and roads were substandard.
--There was no public transport.
--Caravan parks were crowded and new ones filled before construction was finished.

"The Premier of Queensland shrugs the problems of Gladstone off by saying it is a work town, it is not a play town," he said.

This was the type of remark made at the time of the Industrial Revolution in England and "The dark satanic mills," he said.

--There was a serious, growing threat of pollution.

CSO: 5000

SALINITY, EROSION WIPING OUT VAST AGRICULTURAL LANDS

Problems in West

Perth THE WEST AUSTRALIAN in English 21 Feb 81 pp 3,22

[Article by Michael Zekulich: "Salt Has Got Land Equal to 200 Farms"]

[Excerpts] Salinity in WA last year wiped out the equivalent of about 12 wheatbelt farms.

Land equal in area to about 200 farms is now out of production because of salt.

The Agriculture Department estimates that saline areas are now spreading at a rate of more than 19,000 hectares a year. Seven years ago the average rate was 2250 hectares a year.

Agricultural authorities lay most of the blame for the drastic state on the "million-acres-a-year" releases of new land in the 1960s.

They warn that the wheatbelt could become a dustbowl--a treeless, part-desert plain.

The State Government has been attacked for an alleged lack of positive leadership in trying to combat the problem.

Worry about salt and wind erosion has prompted six shires in the Merredin region to hold a meeting on Monday to consider setting up a soil-conservation area.

Proposals to be put at the meeting include:

--The banning of further clearing in the region.

--The seeking of State and Federal aid for the provision of free trees for planting.

--Consideration of a 10 per cent minimum of farmlands being left as natural bush with replanting to that level, if necessary.

--The education of local communities on the benefits of tree-planting wherever possible.

Soil-conservation legislation introduced in WA in 1945, with wide-ranging powers on freehold land has never been compulsorily enforced.

Approach

Warnings have been given but the official approach has been to seek farmer co-operation for control work, rather than "wield the big stick."

An ecologist, Dr Tom Riggert, says that efforts to do something about land degradation have so far only been token, a whitewash.

Figures from the Agriculture Department show that the average rate of salinity has risen about 850 per cent between the period from 1962-74 and the period from 1974-79.

There are now 263,000 hectares of land in WA made useless by salt. All agricultural areas are affected, with northern districts the worst.

The severe damage caused by wind erosion is also worrying many people. Millions of tonnes of valuable topsoil have been blown away in the past five drought years.

Agriculture Department experiments have shown that heavy grazing of sheep on hard-setting light lands provides the potential for wind erosion of 120-150 tonnes per hectares a year.

A reduction of 4mm in top soil can result in a loss of wheat yield of eight to 20 per cent in the ensuing year.

The Minister for Agriculture, Mr Old, who is responsible for the Soil Conservation Act, said that if a heavy hand was used against farmers, it would antagonise them.

But such action could be taken in the future, if necessary.

Mr Old said that the Government was closely considering land degradation but there was no State overall plan.

The State was waiting for Commonwealth funds promised for soil-conservation projects.

"The most stringent controls ever will now apply to new releases.

"But a lot of the responsibility must go back to the man on the land.

"I am sure that planting trees will help the situation, but it is not the total answer.

"Planting up to 10 per cent of properties could be something we will have to do in the future.

State Control Rights

Perth THE WEST AUSTRALIAN in English 21 Feb 81 p 23

[Text] The State Government could regulate land use and management practices on freehold properties under the Soil Conservation Act, if it wished.

The control measures include:

--The banning of interference to trees and bushland.
--Preventing areas being used for agriculture.
--Stopping changes to farming practices.
--The banning of indiscriminate burning.
--Restricting cropping to certain areas.

National Impact

Perth THE WEST AUSTRALIAN in English 21 Feb 81 p 23

[Excerpt] The erosion problem and salinity have now reached significant proportions around Australia.

Of the area used for agricultural and pastoral production, 52 per cent, or one third of the total area of Australia, now needs some form of conservation treatment.

Five years ago the cost of conservation work needed to control degradation was estimated at $675 million. The WA cost was estimated at $48 million.

It would be a lot more today.

Big tracts of extensively cropped land in WA are degraded, with more than two-thirds requiring urgent treatment.

It is estimated that nationally, 495,000 square kilometres of grazing land and 68 per cent of the 443,000 square kilometres of land used for extensive cropping need treatment for degradation.

CSO: 5000

CROP SPRAYING DESTROYS COMMERCIAL BEE HIVES

Perth THE WEST AUSTRALIAN in English 6 Jan 81 p 3

[Text] Cropspraying operations near Harvey have wiped out 800 commercial beehives--the biggest reported loss caused by insecticide spraying in WA.

The Department of Agriculture has assessed the financial loss at up to about $70,000, but other informants say that it could be much more.

The incident which occurred in the Myalup district before Christmas, has led to a call by the department for better communication between farmers intending to spray their crops and bee-keepers likely to be affected.

The Farmers' Union of WA says that some form of compensation for bee-keepers affected in such circumstances should be considered.

But the Director of Agriculture, Mr E. N. Fitzpatrick, said yesterday that he believed that any action on compensation would have to be a civil matter.

Though the department wanted better cooperation between farmers and bee-keepers it was not considering regulations or legislation on the matter.

"We want to encourage people to communicate and we will examine ways in which this may be facilitated," Mr Fitzpatrick said.

7 Affected

Seven bee-keepers were affected by the spraying of the insecticides west of Harvey.

The spraying is said to have been done to control budworm and aphids on lucerne and strawberry clover crops.

One bee-keeper lost 500 hives.

The Department of Agriculture said that the cost of replacing the dead bee colonies would be about $20,000 and the loss of production would be between $25,000 and $50,000.

There would be little or no effect on overall honey production in WA.

Bee-keepers should tell adjacent farmers when they put bees on sites near farms, and farmers and contractors should tell bee-keepers in the area if they intended to spray and name the chemicals that they proposed to use.

Though bees would fly 11km to attractive flora they mainly worked within 2 km of their hives.

Risk

The risk to bees from spraying was not only to bees seeking nectar from plants being sprayed. There was also a risk to flying bees while spray was in the air.

Mr Fitzpatrick said that bee-keepers should tell farmers of the location of hives. They should also give farmers a foolproof method of getting in touch with them while they were travelling or away from their headquarters at odd hours.

Mr Fitzpatrick, who is chairman of the national coordinating committee for agricultural chemicals, said that the use of appropriate chemicals was vital to Australia's agricultural industries.

In the present climate of public unease about chemicals, it was imperative that all farmers, contractors and chemicals users displayed the utmost responsibility so that the right to use chemicals was preserved.

The executive officer of the Farmers' Union bee-keepers' section, Mr A. Layton, said yesterday that the bee-keepers involved in the Myalup incident had hives on private and public land.

It appeared the bee-keepers had not been aware of the spraying and the property owners had not been aware of the presence of the hives.

Mr Layton said that the loss of 500 hives by one bee-keeper would be disastrous.

Minor cases had been reported previously of bee-keepers being adversely affected by insecticides used in crop-spraying.

Mr Layton said: "To my knowledge, it is hard for bee-keepers in these circumstances to get compensation. There is no legislation to deal with such cases."

CSO: 5000

DANGERS TO COASTAL FISH POPULATION ENUMERATED

Perth THE WEST AUSTRALIAN in English 2 Mar 81 p 4

[Text] The fish population in Cockburn Sound is endangered because of an increased production of algae, according to Dr. G. Chittleborough, the head of the Department of Conservation and Environment's marine-studies branch.

He said that the area of sea grass in the Sound had fallen from about 40 square kilometres in 1954 to 9 sq/km in 1978.

Writing in the January issue of Australian Fisheries on the need to preserve habitats in coastal waters, Dr Chittleborough said that the production of sea-grass leaf material was estimated to have dropped from 23,000 tonnes a year to about 4000 tonnes a year in this period.

This had led to increased production of algae.

Cockburn Sound had little run-off from streams but achieved a fair productivity from the good sea-grass covers around its shallow margins.

A fertiliser production works and a major sewage outfall helped enrich the waters, leading to bigger algae blooms. This smothered the sea-grass by cutting off the sunlight, he said.

At the height of the blooms the levels of dissolved oxygen available in the deeper waters of the Sound had fallen to low levels, endangering the fish.

"Additional though localised problems in Cockburn Sound include harmful contamination of sediments, levels of metal (especially cadmium) in shellfish, smothering food plankton and killing of fish by hydrocarbons," Dr Chittleborough said.

'Solutions'

"Solutions to each of these problems are available but are expensive."

Dr Chittleborough said that Australian coastal waters depended on inputs from the land mass for many of their essential nutrients.

Although in many regions the run-off was low and erratic the coastline generally had a productive fringe of sea-grass, mangroves or salps.

Many commercial fisheries depended directly or indirectly on this coastal plant fringe.

Rapidly expanding recreational fishing also depended heavily on continued plant production in the shallow coastal zone.

Estuaries and associated bays were especially productive because nutrients were channelled through them to the sea, he said.

Salinity

The permanent residents of estuaries were able to withstand fluctuations in salinity. The estuaries were also visited seasonally by prawns, crabs and fish taking advantage of the extra food during their rapidly growing young stages.

Bays with little direct input from land run-off sheltered young fish of many species.

"Such nursery grounds generally rely greatly on seagrasses as their source of organic material," Dr Chittleborough said.

"Few species graze directly on the sea-grass meadows. Most depend on small organisms in the decaying leaves which are the source of a rich detritus."

Dredging

Dr Chittleborough said that reclamation of swamps, dredging of shallow banks and erection of retaining walls, so often regarded as "improvements," could turn an estuary into little more than a drainage canal.

Deepening might im-

prove rattling, but it would also remove the shallow sea-grass beds essential to maintain productivity.

Waste disposal further aggravated the problem by direct toxicity which killed marine organisms or by tainting them so they were no longer sought as food.

A more subtle process was increased turbidity caused by waste disposal. This cut off the light which was critical for the plants' survival.

Dr Chittleborough said that, because Australian waters were generally poor in nutrients, enrichment by man, however accidental, might be thought to be an advantage.

But systems that had evolved over millennia, taking advantage of limited natural resources, did not produce more of everything when subsidised by rich nutrients.

The plants that responded to the nutrient might not be the ones most suited to grazing species. They might bring their own problems, disrupting a previously well balanced system.

Fertilisers

In the Peel Inlet an increased input of agricultural fertilisers draining from the land, together with a lower freshwater run-off, was the main cause of the rooted plants Ruppia and Halophila being replaced by massive growths of the green alga Cladophora, or goat-weed.

WA's mangrove communities, which were important nursery grounds for commercial and recreational fishing species, were coming under increased pressure.

The trees helped keep the sediments stable, taking the brunt of storm waves and minimising erosion of vulnerable foreshores.

The apparently barren salt flats above the trees could also be important. Immediately after floods they were covered with a mat of bluegreen algae that was efficient in fixing atmospheric nitrogen as a nutrient source.

Kelp on the shallow coastal reefs of WA acted as nursery grounds for juvenile crayfish.

The settlement of crayfish larvae on many of these reefs exceeded the carrying capacity, so the growth rate was inhibited and the natural mortality relatively high, Dr Chittleborough said.

"Any increased pressures on this habitat will have immediate repercussions in reducing recruitment to the fishery," he said.

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PHOSPHOROUS BUILDUP PRODUCES ALGAE PROBLEMS

Perth THE WEST AUSTRALIAN in English 17 Jan 81 p 13

[Article by Michael Sinclair-Jones: "Inlet Study Warns on Algae Danger"]

[Text] A State Government study has found that it could take up to 10 years for Peel Inlet and the Harvey estuary to be cleansed of fertiliser pollutants threatening crabs and fish.

Scientists examining the waterways since 1976 have found that hundreds of tonnes of superphosphate are being washed into the local river systems, causing an acute build-up of phosphorous in the estuarine waters.

The phosphorus causes the lush growth of algae or blooms which, when they decay, starve marine creatures of life-giving oxygen.

The process, known as eutrophication, has already occurred at Novara Bay, in Peel Inlet, where foul-smelling, decaying algae has been suffocating fish and crabs for several weeks.

Though recent tests have shown that advanced eutrophication is restricted to only about 200 metres of shoreline at Novana Bay, it can occur anywhere the algae starts to decay, and the two waterways are choked with it.

With a plentiful supply of phosphorus and summer warmth, the most common form of algae in Peel Inlet and the Harvey estuary--cladophora--can double its weight within a week.

Dr Ross Field, secretary of the Department of Conservation and Environment research team examining the waterways, said this week that this season's algae growth had started in the estuary in November and had spread throughout the entire waterway system.

Tests had shown that in 1977-78, a total of 121 tonnes of phosphorus had been washed into the two waterways by the Harvey, Murray and Serpentine rivers.

The Harvey River had accounted for 73 tonnes of phosphorus--mainly from the heavily fertilised, irrigated dairy-farming land within its catchment area.

According to official estimates by the department, a total of 815 tonnes of superphosphate was used in 1977-78 by local farmers whose properties drained into the Harvey River.

"There is no doubt that superphosphate is causing the problem in the water systems," Dr Field said.

EPA Report

Last year's Environmental Protection Authority report said that the excessive growth of algae in the two water systems had been a problem for ten years.

The EPA found that the amount of phosphorus entering the estuary system was now 50 times greater than 25 years ago.

The problem was compounded by the unusual growth characteristics of the main species of algae in the Peel Inlet and the Harvey Estuary--cladophora.

University of WA studies had shown that cladophora could store nitrogen and phosphorus when the two nutrients were being washed into the estuary system by winter rains.

The algae could then use the nutrients in spring and summer when light and temperature conditions were more favourable to growth.

The latest bulletin issued by the department, titled "Wetlands--guidelines for protection and management" says: "Once a wetland has become eutrophic, it is extremely difficult to reverse the process.

"Even with good management, recovery may take many years."

Dr Field said there were three ways to overcome the problems in Peel Inlet and the estuary:

--Reduce the level of phosphates in the water by reducing the amount of superphosphate being applied to the surrounding farmland.

--Dredge out the sediment and weeds along the bottom of the waterways to reduce phosphorus storage, which would provide relief for up to seven years.

--Create new channels or widen existing ones to improve the ability of the water system to flush phosphorus and other nutrients out to sea.

He said the dredging and channel proposals offered only short-term solutions.

It would take at least another two years to investigate the practical aspects of such operations.

The best solution lay in reducing the amount of phosphorus by better fertiliser management on farms in the catchment areas.

A secondary problem was created by the use of septic tanks for sewage disposal along the edge of the estuary in the new holiday-development project, he said.

Dr Field said he expected that his research team's report on Peel Inlet and the Harvey Estuary would be presented to the EPA next month, and would go to Parliament later this year.

An Agriculture Department scientist, Dr W. Cox, said this week that a programme to reduce the amount of superphosphate used on local farms had been in operation in recent years.

CSO: 5000

CORIO BAY SEABED BARREN; POLLUTION PROBE REQUESTED

Canberra THE AUSTRALIAN in English 17 Feb 81 p 4

[Article by Andrew Woodley]

[Text] The Victorian Environment Protection Authority is to investigate a report which shows an area of the seabed in Geelong's Corio Bay has little or no vegetation in the area of an industrial discharge.

The report, called Sediment Distribution and Movement within Corio Bay, is the result of a survey by the Melbourne University Geology Department for the environmental studies section of the Ministry for Conservation.

"We are trying to get hold of the report to decide if any follow-up is required," an EPA spokesman said yesterday.

Professor Tom O'Donnell, a Melbourne University inorganic chemistry expert, says an area of about 2.5km by 1km contains significant areas of seabed which are barren.

He says the report shows one area at the discharge point and another two in the path of the waste outflow.

"I believe this is sufficient evidence to warrant a full investigation of possible pollution damage to the whole marine environment," Professor O'Donnell said.

"In other areas of the bay there is a full vegetation cover."

The professor said last week that large amounts of fluoride were being dumped in the bay mainly by the north shore fertiliser company, Phosphate Co-operative Company of Australia.

But experts say there is no clear evidence or research which shows fluoride damages the marine environment.

But yesterday Professor O'Donnell said: "The best interpretation of the observed lack of marine vegetation in the well-defined location is that it is a direct result of massive fluoride deposits."

The EPA says the company fulfills all the requirements of its discharge licence. But the professor says the problem has been overlooked because most of the discharged fluoride forms a solid sediment and the fluoride level in the water is scarcely affected.

CSO: 5000

RAMIFICATIONS IN U.S. COURT CASE TO HALT ALCOA MINING

Perth THE WEST AUSTRALIAN in English 2 Mar 81 pp 3,9

> [Text] Writs lodged by the WA Conservation Council in the United States last week to curb bauxite mining in the Darling Range will have no immediate effect on Alcoa's operations.

Litigation is likely to be protracted--possibly over years in the complex class-action case that the Conservation Council has opted to take.

The council did not seek an interim injunction, which would have imposed immediate restraints on Alcoa and the Reynolds Metal Company mining the Worsley site.

Till there is a finding, the company will continue to mine and process its ore.

The full text of the writs was released yesterday.

They are the first to be lodged under American law against American companies to restrain their actions outside America.

Anticipated

A spokesman for the Conservation Council, Mr Bill Hare, said that lawyers for the council expected the companies to ask for summary judgment.

The companies have 30 days in which to reply to the writs.

If a summary judgment bid fails--the council would oppose such a move--it could take about six months to come to trial.

[In the only other U.S. class-action involving West Australians, the Agent Orange case, it has taken two years for the case to be approved for trial and this is expected to begin in May.] [as published]

The 60-page affidavit released yesterday stated that the Conservation Council was claiming class action on behalf of all those entitled to the full benefits, use and enjoyment of the unique non-renewable natural-resource treasures of the Darling regional ecological systems.

Claims

The council cites the claims made by the companies that Australia produces more bauxite than any other country in the world and that WA produces the majority of this solely from the northern jarrah forest.

The injunction seeks restraints in the following terms:

--Restraining the companies from any further bauxite mining, alumina refining and aluminium smelting operations in the State forests of WA, till they provide an inventory of bauxite deposits within their leases in total, particularly those leases outside the forests, and till they present economic impact analyses of the feasibility of using bauxite from outside the forests.

[There are no other aluminium smelters at present in WA but there is a likelihood of one in the Brunswick area].

--Restraining mining in the water-supply catchment of the Darling Range, unless it could be established by credible scientific evidence that the mining would not increase the salinity of the water.

--Restraining the companies from refining and smelting till it could be established that neither would contaminate the air, water and soils of the Darling region.

The council also asks for a temporary limiting restraint on production at the already established refinery of Pinjarra and Kwinana and those under construction at Waterup and Worsley so that only bauxite that could be mined without damage to the forests would be processed.

The council alleges that despite assurances by the now Premier, Sir Charles Court, in September 1961. Alcoa has increased its mining seven-fold and will double it again when Wagerup comes under production.

Output

In Hansard on September 5, 1961, Sir Charles said that as long as the company was on an output of 550,000 tonnes a year 10 hectares would be the total clearing.

"I think it has been conveyed in the public mind that huge areas will be involved all the time and we will have ugly scars all over the place from one end of the State to the other," Sir Charles said then.

The writ states that WA is deficient in forests, fresh water and fossil fuels and that bauxite mining, alumina refining and aluminium smelting in the Darling region would cause serious, permanent and irreparable damage.

Perth already had the most saline water supply of any Australian capital city and any increase in the salinity of that water supply represented an imminent danger to public health, the writ says.

The writ asserts that both Alcoa and Reynolds Metals, being American companies, had failed to adequately consider the impact of their operation on the unique non-renewable resources of WA though both companies had knowledge of the impact.

The public-relations manager for Alcoa, Mr Jeremy Rush, said that any legal action pursued in the United States to prevent Alcoa from exporting its alumina would be vigorously contested.

The Conservation Council is attempting to raise $100,000 for its action but this could be more if the action becomes protracted.

Mr Rush said that there was a worldwide demand for raw and refined materials and Alcoa was playing a significant part in helping WA to take advantage of this.

In return Alcoa was becoming a leading provider of jobs and a significant force in the WA economy--injecting $1.6 million daily into the State's economic system.

Alcoa was operating under stringent environmental safeguards with the agreement of State and Federal governments.

He said that the 20,000 people who relied directly and indirectly on Alcoa for their jobs must be curious about the motives of the WA Conservation Council.

CSO: 5000

LEAD-FREE GASOLINE RECOMMENDED FOR NATIONWIDE USE

Cost Factors

Canberra THE WEEKEND AUSTRALIAN in English 10-11 Jan 81 p 3

[Article by Kevin Love]

[Text] A report to all State transport ministers strongly supports the NSW Government's controversial decision to introduce lead-free petrol by the middle of this decade.

The Committee on Motor Vehicle Emissions says a national unleaded petrol strategy would achieve health, environment and energy objectives and would not be too costly.

To let NSW go it alone would result in serious, adverse effects on industry, consumers and government administration, the committee reported.

Its findings on a long-term national motor vehicle emission strategy were released in Canberra yesterday.

The report throws the controversial petrol argument back to the transport ministers, who will discuss the findings at an Australian Transport Advisory Council meeting in Melbourne next month.

The NSW Government has been heavily criticised, especially by the Federal government, for deciding to introduce lead-free petrol.

Critics say capital costs to the car and petroleum industries would be enormous.

An Australian Institute of Petroleum report said new cars would cost up to $300 more and use up to 15 per cent more fuel with lead-free petrol.

But yesterday's report said the capital and running costs would not be at all great.

And it advises that NSW should not be allowed to go it alone. The other States should follow in a co-ordinated national policy.

The report said the adoption of the equivalent of very strict United States exhaust emissions would cost the community from $450 million to $1000 million (in 1979 prices) up to 1996.

This is much cheaper than the $1200 million for the next 10 years alone claimed by the Institute of Petroleum and the $2000 million suggested by a Senate standing committee on national resources.

Industry Objections

Sydney THE SYDNEY MORNING HERALD in English 12 Jan 81 p 9

[Text] Melbourne--Stricter motor exhaust emission controls are unnecessary, the Australian Institute of Petroleur says. [as published]

Existing laws were making a big enough reduction in car pollution, the institute's executive director, Mr Peter Parkin, said yesterday.

He said a 335-page report by the Committee of Motor Vehicle Emissions--which comprised Government, oil and motor vehicle representatives and three institute members--agreed Australia should move to lead-free petrol if tighter controls were required, but it questioned whether they were needed.

The report, released by the Federal Transport Minister, Mr Hunt, last Friday, failed to realise the cost of its findings, Mr Parkin said.

It will be presented to Federal and State transport ministers next month, to decide on emission control regulations.

Mr Parkin said the report showed introducing unleaded petrol from 1986 to 1996 would cost $1,600 million and require another 16 million barrels of crude oil, but failed to note these costs in its conclusions.

The institute's environmental division's executive director, Mr Dallas Crook, says the money would buy refinery equipment.

The extra crude oil would be needed to lift the octane level of unleaded petrol--presently 89 octanes--to the report's recommended 92 octanes, bringing it closer to the 97 octanes of leaded petrol, he said.

If stricter emission laws were introduced they would probably require the attachment of catalytic converters on cars to make the noxious exhaust fumes less harmful.

But lead-free petrol would have to be introduced because lead destroyed the converters, making them useless, he said.

Alternatives to catalytic converters were "significantly" less effective in keeping motor exhaust emissions down, Mr Crook said.

Hon Mr Parkin said emission controls introduced in 1976 had improved energy levels (eg reduction of photochemical smog) in the major capital cities with less than 40 per cent of cars fitted with converters.

Meanwhile Victoria's Minister for Transport, Mr Rob McClelland, said in Melbourne yesterday that the State had not yet determined its emission policy, though it had been working on the report for a long time.

NSW's unilateral policy for lead-free petrol was "a bit of posturing," he said.

"I know no one has been silly enough to go along with them."

Differences should be hammered out until a compromise could be found, Mr McClelland said.

"A unilateral stand is not a good method of making policy decisions. It is exploitative and dramatic."

Also in PERTH, the Western Australian Minister for Transport, Mr Cyril Rushton, said he hoped NSW would reconsider its policy.

He was commenting on a suggestion in the COMVE report that introduction of catalytic converters would increase petrol consumption by 3.8 per cent.

"It had been hoped that the catalyst approach would give the cleaner air desired by some in conjunction with the improved fuel consumption sought by others," Mr Rushton said.

The report showed there was no need for additional emission controls for Perth, and certainly not in country areas, he said.

A compromise had to be reached for all car users throughout Australia.

CSO: 5000

WA GOVERNMENT OK'S OIL SEARCH AGAINST EPA WISHES

Perth THE WEST AUSTRALIAN in English 24 Jan 81 p 5

[Article by Paul Murray]

[Text] The WA Government has taken the first step towards allowing petroleum exploration on an area which the Environmental Protection Authority wants classified as an A-class flora and fauna reserve.

The 4888ha area covers the Lake Logue wetlands, west of Eneabba.

Any exploration would be subject to approval by the Government after the EPA had made recommendations on an environmental review and management programme.

In a 1976 report on reserves, the EPA recommended that the Lake Logue land be preserved for a national park and for the conservation of flora, fauna and water.

The recommendation has not been acted on. The land is still classified as a C-class reserve which can be cancelled or changed by the Government.

An A-class reserve can be changed only by an Act of Parliament.

The proposed moves on the land were included in proclamations in the Government Gazette yesterday.

Four proclamations by the Governor, Sir Richard Trowbridge, removed five reserves from the provisions of the Land Act and made them subject to the Petroleum Act.

Three were flora and fauna reserves, one was for camping on the Harvey River and the other was set aside for "government requirements."

The three flora and fauna reserves are the Lake Logue area, a 404 ha reserve nearby and a 6888ha reserve near Yardarino, in the Dongara area.

The Yardarino reserve was set aside to preserve richly-vegetated sand plain country.

CONDITIONS

The proclamations on the flora and fauna reserves set out a series of conditions for petroleum exploration. They are:

- An ERMP must be carried out and the recommendations of the EPA considered by the Minister for Mines.
- Survey lines should make minimum interference to vegetation and avoid, where practicable, fragile areas such as steep slopes, wetlands and thickets of timber. Tracks should be made with superficial blading and, as far as practicable, topsoil with contained seed and rootstocks should be left in place.
- The movement of vehicles should be restricted to survey lines and existing constructed tracks.
- All vehicles which have travelled off sealed roads should be washed down to prevent the spread of dieback.
- No open fires should be lit except for testing, which should be done in a properly constructed burn-pit.
- Employees and contractors associated with the petroleum exploration permit holder are exempted from the provisions of the Wildlife Conservation Act.
- There should be no dumping of rubbish, spillage of fuel or oil or discharge of pollutants.
- On completion, reasonably practical measures should be taken to restore the area to its original condition.

A special provision for the Lake Logue reserve covers interference with drainage patterns where seismic lines pass through wetlands.

CSO: 5000

BRIEFS

SCRUB FIRES--CSIRO scientists hope controlled bushfires can free millions of hectares of grazing land from the choking grasp of excessive scrub growth. During the last 100 years scrub has taken over much of the arid inland of NSW Queensland and Victoria, stifling areas in the drier ranges that have been opened up for domestic animals. Scientists believe the effects of excessive grazing and the suppression of the once-frequent bushfires have combined to cause the problem. A CSIRO team, led by Dr Graham Harrington, is testing the use of controlled fire to kill the scrub growth, and results so far have been encouraging. But about 8 million hectares of rangeland is already "shrubbed-out" and beyond reclamation by fire, Dr Harrington said recently in Rural Research, a CSIRO publication. Shrub dominance does not allow the grass to grow, and without surplus grass growth there is insufficient fuel to sustain a fire. The team is now directing its efforts to drier mulga woodlands west and north of the Darling River where the scrub still seems controllable. [by Vernon Graham] [Excerpt] [Canberra THE AUSTRALIAN in English 13 Jan 81 p 2]

CSO: 5000

PARLIAMENT APPROVES ANTIPOLLUTION BILL

New Delhi PATRIOT in English 26 Feb 81 p 5

[Text]

THE Parliament on Wednesday approved the Air Prevention Bill, 1980, with an assurance by Minister of Works and Housing Bhishma Narain Singh that the Government would take all necessary steps for the abatement of air pollution, reports PTI.

The bill, approved by the Rajya Sabha as passed earlier by the Lok Sabha, also provides for the establishment of boards for the purposes of prevention and control of air pollution.

Mr Singh told the Upper House that Rs 12 crore had been allocated in the Sixth Plan for the air pollution control board.

The Minister allayed the fear of the opposition members about the threat of damage to Taj Mahal from Mathura refinery and local foundaries. Adequate steps, he said, were being taken to protect the historic monument.

Earlier, Mr K C Pant (Cong-U) and Dr M S Adiseshiah said that the Bill was rather "tentative" and hoped that it would be part of a wider programme of the Government for prevention of air pollution.

Dr Adiseshiah pointed out that there was nothing in the Bill to suggest how the Government was going to tackle the areas already affected by air pollution. It only dealt with steps to be taken to prevent pollution in future.

UNI adds:

Several members urged the Government to take steps to protect the citizens against noise pollution caused by aircraft particularly during night time.

Mr K C Pant pointed out that many advanced countries do not allow overflying of aircraft at night.

While welcoming the measure, he said harm arising from indoor pollution should not be lost sight of. Indoor pollution is as harmful to health as environmental pollution.

CSO: 5000

PRESS DISCUSSES DILEMMA IN CORRELATING CONSERVATION WITH GROWING DEMANDS

Madras THE HINDU in English 27 Feb, 2 Mar 81

[27 Feb 81, p 8]

[Text] Power Versus Ecology--is the dilemma faced by planners and conservationists in correlating the growing needs of power with preservation of renewable sources like forests. A recent seminar was devoted to a study of the implications of hydel projects in North Kanara. A decentralised power system with a network of mini, micro and large plants was suggested by the participants.

SHOULD the national energy policy aim at power generation per se or should it be tempered with the needs of social justice?

The planners' preference for big projects and the consequent escalation of costs, the rising quantum of social costs required for rehabilitating the people displaced by the project, and the propriety of forsaking green forests for power generation, have all contributed to serious lacunae in the present policy.

Environmentalists drew attention to the long-range deleterious effects of the unbridled denudation of forests.

Rural Necessity

The energy policy is silent on the requirements of the rural population, which depends more on firewood than commercial electricity. In Karnataka, a premier State in hydel power generation, the per capita expenditure on all forms of fuel in the rural areas is only Rs. 2.33 and hardly nine paise per month on electricity.

The dilemma faced by the planners and ecologists in correlating the growing needs of power with conservation of renewable resources like forests formed part of an open dialogue at a seminar organised in Sirsi, on the implications of hydel projects in North Kanara, the power bowl of the State.

The discussions encompassed issues of wider dimensions, and nearly 70 experts in different disciplines drawn from all over the country participated in them. They called for a thorough reappraisal of hydro-electric projects.

The seminar highlighted the power versus ecology controversy.

People's Fears

The coastal district of North Kanara, abounding in mineral, marine, forest and horticultural wealth, has been reckoned as the most promising district in augmenting the State's power supply.

The river system comprising the Kalinadi in the north, the Sharavati in the south, and the Gangavali and the Aghanashini in between has a potential of about 2,201 MW. The people of the district are feeling apprehensive about the Kalinadi Stage I project with its nearly 15 dams. The agitation by the local people, led to the temporary staying of the work on the Rs. 135-crore Bodihl project, also known as Gangavali Stage I (210 M.W.).

According to Dr. Madhav Gadgil of the Indian Institute of Science, Bangalore, serious attention should be paid to the rational and sustainable utilisation of resources, as well as to the social objective of giving full priority for meeting the minimum needs.

In North Kanara, the reserved forest selected for rehabilitation of the displaced persons from the Supa reservoir in the Kalinadi project, has been cleared much before the completion of the dam. As a

result the top soil in the area is being washed away and the entire hilly tract in high rainfall zone has been clear-felled. Since the Supa dam is being delayed with the authorities still grappling with the faults in their foundations some areas of the persons likely to be displaced have moved over to that area.

With the forest cover destroyed, there are large deposits of unutilised tailings which would definitely add to the siltation problems. Thanks to the unimaginative policy of supply of bamboos to the paper mills without a clear idea of supply and clear violation of silvicultural regulations, the area once rich in bamboos is now devoid of it. Thousands of basket weavers have been deprived of their cheap raw material.

Mr. Vijay Paranjpe, Gokhale Institute of Politics and Economics, in a special study of the cost benefit analysis of the Bhatghar project, has questioned several assumptions on which the Karnataka Power Corporation got the tag of viability from the Planning Commission. He is in favour of evolving a plan of micro hydel plants through a specially constituted water conservancy bureau. He suggests that thermal plants fired by wood, may be given a trial.

Dr. D. K. Subramaniam, Indian Institute of Science, is more specific. He feels it is wrong to aim at storing every c.c. of rain, and using the available head for generating electricity. He suggests the use of a decentralised power system, with a network of mini, micro, and large plants. This should be supplemented by other energy sources like biogas.

In Karnataka, he says, there are possibilities for undertaking mini and medium hydro projects on the existing rivers and irrigation canals like the Tungabhadra and the Upper Krishna.

A reduction in the depth of water in a reservoir, can save forest area, where intensive cultivation of energy plantations can be taken-up.

In the Sharavati hydro electric project, it is possible to reduce the submersion area by nearly half, with hardly any appreciable reduction in the total power generating capacity.

Indigenous Technology

The technology for executing the mini and micro projects is fairly easy and indigenously available. Large-scale production of equipment required for micro plants certainly can bring down costs, he says. The cost of generating power in micro plants, ranges from Rs. 8,000 to Rs. 9,000 per K.W. while it is around Rs. 6,000 to Rs. 9,000 in other projects. But the saving on distribution and transmission is considerable.

Mr. Chandi Prasad Bhatt, one of the leaders of the Chipko movement, says that they have been able to establish a three K.W. plant in Chamoli district in Uttar Pradesh, and that 30 families are benefiting from it.

Mr. Jagadish Godbole, Maharashtra Association of Anthropological Sciences, Pune, calls for a realistic assessment of the proposed Ichampalli dam across the Godavari to the tri-junction of Andhra Pradesh, Madhya Pradesh and Maharashtra.

Large Dams

A convincing case is yet to be made for choosing a large dam in Ichampalli, which according to him is not an isolated instance and a series of dams in the Godavari system in various stages of planning and implementation, are expected to be harmful to forests and tribals.

Mr. V. D. Sahlani, leader of the anti-project committee, says that people in Tehri Garhwal are opposing the construction of a dam across Alaknanda, on similar grounds. If only the height of the Himalayan ranges are exploited properly, there is no need for any large hydel dams in any part of the country, for meeting the country's requirements of power.

"Why is this sudden love for forests? You did not raise any objection when the Government wanted to release about one lakh acres of forests for purposes of agriculture". This was the question posed by Mr. Shanmugadar, Chief Conservator (Research and Development), Karnataka.

Legal Fiction

• That Karnataka has 15.4 per cent of its land area under forests (practically less than half of the minimum prescribed under the National Forest Policy), is a legal fiction, according to Mr. Shanmugadar. Thirty per cent of the area termed as forests is in the dry zones, where intense biotic interference, like lopping, uncontrolled grazing, browsing and annual fires have brought it down to a state of mere scrub with extremely limited potential. The requirements of timber and fuel of the population have to be met by the forests in the higher rainfall zone. "To what extent can we make further inroads into these forests is the question".

The plight of forests in North Kanara, accounting for 80 per cent of the geographical area (8,289 sq. kms) of the district, is in no way different from the generally depressing picture in the State. A little more than one-third of the forest area, consisting of minor forests, betta and bakkal (forest area around the cultivation areas) is in a state of neglect.

Political considerations influenced the policy of the governments in releasing forest land for agricultural purposes. The Veerendra Patil Ministry in which Mr. Ramakrishna Hegde, belonging to this district, was a member, sought to release one lakh acres of forest land for agriculture, overruling the objections of the forest department officials. The Devaraj Urs Government lost no time in rescinding the decision. But by that time, 27,000 acres had passed hands officially and 73,000 acres, which had been cleared, and worked to be handed over, could not be assigned.

Forest watchers of the district say that much damage had been done already

with the land grabbing spree already in operation. (Cases of encroachment of 67,000 acres of land are pending and unofficial estimate of the encroachment is nearly double).

The total forest area likely to be submerged in all the projects planned under Kali, Gangavali and Aghanashini rivers has been put around 50,000 hectares.

The irony of the situation is that the people of the forest district are put to much hardship in getting firewood, the common man's source of energy. According to the estimates of forest officials, Karnataka is already facing a shortfall of 33 per cent of firewood requirements.

Hasteless Destruction

Three botanists, — Prof. C. J. Saldanha of the Centre for Taxonomic Studies, St. Joseph College, Bangalore Mr. R. M. Patil and Mr. S. M. Sangur of the Karnatak University, while stressing the special features of the flora, made a strong plea for maintaining the ecosystem.

According to Dr. Saldanha, putting a stop to unproductive and unnecessary destruction was a worthwhile objective. Mr. Patil disclosed that 29 species of rare or endemic flowering plants, 15 species of ferns, almost all large mammals and a number of bird species were endangered.

and any further imbalance of the ecosystem would deny organic diversity to posterity. Dr. S. Jayagopar alleged that mismanagement by the local people, and the forest department had resulted in the diminution of plant species in local forests.

Mr. N. S. Adhikh, expert in forestry, said that a total of 2,32,728 hectares of forest area had been lost mainly in hydel projects of Karnataka since 1956. The annual loss from this alone came to Rs. 7.80 crores.

The character of vegetation in the North Kanara forests, he said, had deteriorated due to heavy exploitation for plywood, paper and pulp industries, influx of population, and rehabilitation. Hydel projects like Kali and Bedthi had caused further decimation of forests in extent and quantity.

Rs. 18-crore Plan

Dr. Sivarama Karanth, Kannada writer pleads that the people must avoid wastage of fuel. "We can consume three bodies from the firewood you use per day in heating water". The people should be vigilant to check incidence of smuggling and indiscriminate felling of trees".

Mr. Shanmugvinir said that a Rs. 18-crore plan for the development of forests had been prepared for which the assistance of the World Bank was being sought.

[2 Mar 81, p 8]

[Text]

A STUDY made by Mr. V. M. Mohan Hongi of the Institute Pronota, Pondicherry has revealed the evidence of the diminishing trends of rainfall and in the number of rainy days due to the incidence of deforestation.

The study covered 28 selected stations of the Western Karnataka region and Idukki of Kerala and the data of 70 years were analysed for the purpose.

The loss of forest cover within a radius of 16 km around each station has been taken into consideration and the period 1965-75 has been reckoned as the best suited for analysing the cumulative effects of deforestation which has been accelerated in recent years to meet the increasing needs of forest produce and to make room for the hydroelectric and other development projects.

The study has shown that as a rule, the higher the area of deforestation, more are the criteria showing the diminishing rainfall tendency. In areas where the forest area affected has exceeded 15 per cent like Honnavar, Sampaji, Mannar and Chickmagalur, the declining trend is more pronounced.

In Honnavar, for example, it has been noted that the average rainfall during the decade 1966-1975 is lower by 11 per cent than the 70 year average and the percentage of fall in rainy days is 12.

The 10-year average of 1966-75 both in terms of rainfall and the rainy days is lowest compared to the previous decades and the low rainfall incidence and lower number of rainy days during this decade are higher. The deficit in these stations is noted in indices ranging from seven to 11 out of a total of 12 criteria laid down for purposes of the study.

In coastal stations like Kumta, Karwar, and Mangalore, the declining trends of

precipitation, rainy days criteria, are considerably less than witnessed by the large scale deforestation. This is attributed to the high values of relative humidity due to the vicinity of the sea being able to compensate for the loss of forest cover.

A comparison between Balehonnur, an interior station and Mangalore, a coastal station is interesting. The former with 4,655 hectares of deforestation has a higher downward trend than Mangalore, where the deforested area is 4,290 hectares.

Where the deforestation has been of no great consequence in stations like Kalghatgi, Haliyal, Ullal, Shimoga, Siddapur, Mundgod, Hubli, Khanapur and Bhatkal, the declining trend has been noted in only three of the 12 criteria followed. Honnavar, Virajpet and Kilhegal, form a triangle presenting a decrease in five or more criteria.

The potential vegetation type does not intervene in the mechanism of the link of deforestation with precipitation. In the stations presenting a higher number of declining criteria, all the three potential vegetation like evergreen, moist deciduous and dry deciduous, are represented.

Mangalore, showing a decline in 11 criteria is evergreen, Honnavar with the same record is dry deciduous and Chickmagalur and Sakleshpur, with a warning trend in nine to 10 criteria, bear potential moist deciduous forest.

At the other end of the spectrum, where the decline is noted in only one criterion, Hubli is clothed with dry deciduous forests, Khanapur with moist deciduous and Bhatkal belongs to ever green forest category.

Mr. Mohan Hanjit says that while it is not claimed that the decline in precipitation is considerable in the wake of deforestation, the data presented brings evidence of diminishing trends of rainfall and rainy days. A slight delay in the arrival of rains in a wet station like Mercara can cause havoc with crops like coffee and cocoa by upsetting the berry and fruit production schedule as it happened in 1976.

This emphasises the imperative need to study the climatic variability for the humid zone stations, he says. The study has underlined the absolute necessity of proper conservation of forests of western India to maintain an equilibrium of the climate.

A similar study pertaining to the trends in North Kanara, made by Mr. K. V. S. Raju of the M. M. Arts and Science College, Sirsi, has noted that the average rainfall in the district has gone down from 325 cms to 275 cms during the last two decades.

In the district, as much as one Lakh acres of the forest area has been cleared during the period. In the upghat taluks Supa, Siddapur, Sirsi, Haliyal and Mundgod, the decline in the rainfall has a direct relation to the area of deforestation. The only exception is Yellapur where rainfall has risen from 285 cms to 320 cms but this is attributed to the ability of the existing forest cover to attracting clouds. Below the ghats, the rainfall over 'go has increased in all places except Karwar.

Mundgod, Haliyal and Supa are experiencing utmost aridity, according to Mr. Raju, who also says that it is for this reason that the water falls in the locality generally have low water heads. The forests in upghat taluks are passing through a critical period at present and with any increase in aridity and further abuse of forests, the existing forests in the proposed project areas may start vanishing, warns Mr. Raju.

CSO: 5000

SEMINAR ON WATER PROBLEMS, USE HELD IN BOMBAY

Bombay THE TIMES OF INDIA in English 28 Feb 81 p 6

[Text] Bombay, February 27. India is well endowed with water supply, getting about five per cent of the world supply. Our share of water, on the basis of precipitation, amounts to nearly twice the world average. But there is no cause for optimism because our water usage is increasing rapidly and by the end of the century, India is expected to use 54 per cent of its maximum dependable limits.

This was stated by Mr B. V. Chitnis, director, engineering, Tata Consulting Engineers. He was delivering the keynote address at a two-day seminar on "Water for industry" at the Taj Mahal Hotel here today.

Nearly 99 per cent of water was unsuitable for beneficial use because of salinity or owing to unavailability on account of location. But the real problem was that water could be in the wrong place and of the inappropriate quality. Our earlier assumption that it was freely available had been shattered with the realisation that it was an economic resource with a cost tag, Mr Chitnis said.

Since independence to the end of the sixth plan period, the irrigation departments would have spent Rs 22,000 crores in harnessing water supply. The recently formulated national water resources plan envisaged an investment of Rs 50,000 crores for developing water resources by year 2000.

Real Competition

Irrigation was going to be the most important determinant of price for water and, because of its political leverage, the price would continue to be low, Mr Chitnis observed.

The real competition, he said, would be between the industrial and the domestic consumers. In Bombay, the ratio of industrial to domestic water usage was 1:3. Some serious consideration would, therefore, have to be given as to whether major industries, consuming large quantities of water, ought not to be kept away from large urban centres.

Also necessary to consider in our policy was the possibility of making use of our extensive coastline since sea water for condenser cooling was not only a feasible proposition but thermodynamically, marginally superior, Mr Chitnis pointed out.

Dealing with recycling water used by industries, Mr Chitnis said that effluent treatment did not come cheap and small industries would find the cost unbearable. One answer could be the grouping of complementary industries from the point of view of mutually neutralising effluent. Well-planned, deep underground disposal could be another solution.

The governor of Maharashtra, Mr O. P. Mehra, who inaugurated the seminar, emphasised the need for industry to recycle the water it consumed.

According to Dr B. V. Bootha, chairman of the seminar committee, the Soviet Union today was able to recycle 70 per cent of the fresh water used by industry.

The seminar has been jointly sponsored by the Indian Water Works Association, Bombay centre, and the Indian and Eastern Engineers. One of the delegates is Mr C. Van Der Veen, who is the president of the International Water Supply Association. Mrs Sharayu Daftary, president of the Indian Merchants Chamber, is a special invitee.

CSO: 5000

MINISTER SAYS HILL ECOSYSTEMS TO BE RESTORED

Bombay THE TIMES OF INDIA in English 1 Mar 81 p 12

[Text] New Delhi, February 28. Mr N. D. Tiwari, Union minister of planning and labour, today announced that a development force, consisting mainly of ex-servicemen, would be created during the sixth plan to restore the damaged hill eco-systems through afforestation and soil conservation measures.

This would be part of the intensive forestry development programme to be launched in all districts to provide ecological security, fuel, fodder and other domestic needs and to meet the requirements of the small and large scale forest-based industries.

Addressing the 20th convocation of the Indian Agricultural Research Institute (IARI) here, Mr Tiwari said the restoration of the Himalayan and Western Ghats eco-systems through a massive afforestation programme would get priority during the plan period.

School children would be involved in a programme of "a tree for every child." University and college students would be encouraged to organise eco-development camps.

The minister stated there was a proposal to set up a Central groundwater corporation to act as a catalyst for accelerating groundwater development in states.

Terms of Trade

Dr H. K. Jain, director of the IARI, said the non-agricultural sector in the country was not generating the kind of demand for farm commodities, which was necessary to increase output.

Agriculture terms of trade increased at an annual compound rate of 4.7 per cent between 1961 and 1968. In the later period, when the high-yielding technology was released to farmers, agricultural terms of trade fell at an annual rate of 2.5 per cent.

This was because the growth rate of agricultural output of 2.7 per cent was more than what could be absorbed by a 4.6 per cent growth of non-agricultural sector.

Dr Jain warned that if the nonagricultural sector was not able to push forward beyond its annual growth rate of 4.6 per cent, the relative agricultural prices might slip further downwards. This would not be in the interests of the country.

He said if a large part of the technology being generated by scientists now was absorbed by farmers, India could become one of the world's best food producing machines by the end of the century.

UNI adds: Fourteen scientists of the IARI are recipients of major scientific awards for their outstanding contributions.

Mr V. S. Mathur, senior wheat breeder at the institute, has been honoured with the silver jubilee commemoration medal (1982) of the Indian National Science Academy. He has evolved the largest number of high-yielding varieties of wheat in the country during the past 15 years.

Dr L. M. Joshi, head of the division of mycology and plant pathology in the institute and his associates, including Dr S. Nagarajan, Mr K. D. Srivastava and Dr V. Singh, have been jointly awarded the Rafi Ahmed Kidwai memorial prize for 1978-79 for their outstanding research in the field of wheat diseases.

Dr S. B. Hukkeri, senior agronomist, Dr A. K. Shanma, junior scientist and Mr H. T. Basantani, research assistant, jointly received the Rafii Ahmed Kiwai memorial prize for 1978-79 for oustanding contributions in the field of irrigation agronomy.

Another team of scientists led by Dr S. C. Pokhriyal, senior scientist in the division of genetics has been the recipient of the Hari Om Ashram Trust award for 1979 for its outstanding work in the genetic improvement in the Baira (millet).

Dr. N. S. Subba Rao, held of the division of microbiology, has received the P. B. Sarkar award for outstanding work in the field of soil microbiology. [as published]

CSO: 5000

ENVIRONMENTAL PROTECTION STRESSED DURING READJUSTMENT

Beijing GUANGMING RIBAO in Chinese 20 Jan 81 p 1

[Text] Reporter Zhang Jingde [1728 2529 1795] reports that the Environmental Protection Leadership Team of the State Council recently called a fifth meeting to discuss the problem of environmental protection work during the period of readjustment of the national economy. It was pointed out that during the readjustment period, capital construction should be sufficiently curtailed but the goal of environmental protection must not change.

The meetings were chaired by Vice Premier Gu Mu [6253 3668], head of the Environmental Protection Leadership Team. Li Chaobo [2621 6389 0130], deputy director of the State Construction Commission and director of the Office of the Environmental Protection Leadership Team, reported on the environmental protection work of the past 2 years and future work arrangements. Comrade Gu Mu said that during the period of readjustment of the national economy, leaders of all ranks must adopt a positive attitude in looking for all sorts of ways to carry out environmental protection work. Environmental protection is a long term basic policy. The ideological understanding must be improved for the establishment of effective and strict environmental protection laws. During the period of readjustment, due to financial constraints not much money can be spent for environmental protection, but if all the leaders pay attention to the policy and urge the factories and plants to be positive in improving the management standard and stressing technical reform, China's environment can be improved by spending very little money and doing a lot of work. He also called on the Office of the Environmental Protection Leadership Team of the State Council and the State Bureau of Urban Construction to push for good environmental protection work in Beijing, Hangzhou, and Guilin.

The comrades who participated in the meeting expressed the view that the present condition of environmental pollution and destruction of natural resources in China are serious. The lives, learning, and work of the people are affected by this outstanding problem. Environmental protection requires money and materials, but more importantly, it requires correct ideas regarding direction. If the various levels of government can seriously emphasize environmental protection, strengthen the propaganda and education work, and adopt effective measures and methods, very good results can be obtained without spending much money.

All agreed that it is extremely important to strengthen the work of environmental legislation. The experience of the trial implementation of the Chinese People's

Republic Environmental Protection Law should be summarized as soon as possible to make it official, and various concrete environmental management regulations should also be enacted. The various regions should also formulate local environmental protection rules and regulations. The work of environmental protection in Beijing should lead that of the entire country. The Beijing Municiple People's Government should seriously carry out the four proposals made by the central secretary last April regarding the construction of the capital. As soon as possible, the capital should be made into a first-class, beautiful, clean and modernized city.

More than 40 persons participated in the meeting, including the heads of the State Planning, Construction, Economic, Agricultural, Science and Education, Public Health, Financial, and Legislative Commissions.

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BRIEFS

ENVIRONMENTAL PROTECTION--Beijing, 12 Mar (XINHUA)--China will launch a publicity campaign for environmental protection from the middle of March to the end of April. This has recently been decided by the environmental protection leading group under the State Council. The campaign is designed to help people understand the importance of environmental protection. In China today, many enterprises are not paying much attention to environmental protection, and natural resources, particularly forests, are suffering serious destruction, says a responsible person of the environmental protection leading group. The group suggests that all propaganda units, localities and departments should take various actions to publicize the importance of environmental protection in the light of actual situation. [Beijing XINHUA Domestic Service in Chinese 1408 GMT 12 Mar 81 OW]

ENVIRONMENTAL WORK CONFERENCE--A national conference on instruments for monitoring environmental pollution jointly called by the state meters and instruments general administration and the State Council's office of the leading group for environmental protection opened in Hangzhou on 23 March. The conference participants will sum up past experiences in environmental protection work in China in the past few years, exchange information on the research and production of instruments for monitoring environmental pollution and discuss suggestions for producing new products in this field. [Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 26 Mar 81 OW]

ENVIRONMENTAL PROTECTION FORUM--Jinan, 20 Mar (XINHUA)--A national forum was held 12-18 March in Jinan, Shandong, to discuss environmental protection work during the period of economic readjustment. The forum was attended by directors of environmental protection bureaus from various localities. They studied the recent State Council resolution to strengthen environmental protection work during the national economic readjustment period and discussed measures to be taken to control pollution, including the establishment of a responsibility system with rewards and penalties and the training of more technical personnel to meet the needs of environmental protection work. Representatives from Shenyang, Jinan, Shanghai, Jiangsu and Jilin introduced their experience to the forum. [Beijing XINHUA Domestic Service in Chinese 1221 GMT 20 Mar 81 OW]

YUNNAN NATURE PRESERVES' EXPANSION--Beijing, 22 Mar (XINHUA)--Nature preserves in Xishuang Banna Autonomous Prefecture in Yunnan Province have been expanded to 200,000 hectares, about 10 percent of the area of the prefecture, according to the GUANGMING DAILY. In the last 4 years the government has made efforts to add to the original 57,000 hectares first set aside in 1958 in Xishuang Banna. Virgin forests

with 4,000 to 5,000 species of higher plants have been included in the 200,000 hectares of nature preserves. That figure represents 30 percent of the total forest area in Xishuang Banna. With high mountains in the north which protect the area from cold winds and warm Indian Ocean monsoons from the southwest, Xishuang Banna is one of the few areas in China enjoying a tropical climate that has tropical and sub-tropical rain forests. Almost untouched by the glaciers of the quaternary period, the forests contain not only rare and ancient trees, but also thousands of plants of great economic and medical value. The number of wild animals and birds have also increased with the expansion of the preserves. [Text] [OW231053 Beijing XINHUA in English 0756 GMT 22 Mar 81 OW]

ENVIRONMENTAL ENGINEERING SOCIETY--Jinan, 24 Mar (XINHUA)--The China Environmental Engineering Society was set up here yesterday. Attached to the Chinese Society of Environmental Sciences, the new society will research and develop measures to control and improve environments, including pollution control projects, environmental engineering economics and monitoring of pollution sources. [Text] [OW261445 Beijing XINHUA in English 1221 GMT 24 Mar 81 OW]

COPPER PLANT POLLUTION CONTROL--Beijing Copper Plant No 1 has adopted urgent measures to treat and control the source of pollution. This factory is located on Baiyun Lu [road], outside Xibianmen [gate]. To the east, it adjoins the famous Baiyunguan [temple], and both the south and north sides are residential areas. Originally, the factory produced a great deal of dust and noise, polluting the surrounding environment, and there was a great deal of objection from the masses. In the process of implementing the four proposals, those in charge of the factory included pollution treatment work as an important item on their agenda. A department of safety and environmental protection was established and a special fund was allocated. A plan was formulated to treat and control the pollution in stages, and two engineers were transferred to take charge of the project. The factory originally had a vertical furnace to supply hot water; the furnace discharged as much as 450 kg of smoke and dust per month. Now, the residual heat of Thermoelectric Plant No 2 is used to heat the water. The furnace has been removed, resulting in a saving of more than 20 tons of coal a month, amounting to a reduction of more than 500 yuan in expenditure, as well as eliminating smoke and dust. In the past, the iron cauldron used to heat the quartz sand was located beneath a residential building, and the smoke and dust were a great problem. Recently, the cauldron was moved to a different location and reconstructed. The pollution problem has been eliminated and the labor condition of the workers has been improved as well. Since last November, work has also been started on treating and controlling the zinc oxide dust of the five copper smelting units in the plant. [Text] [Beijing BEIJING RIBAO in Chinese 27 Dec 80 p 2] 6248

NEW ULTRAPURE HYDROGEN GENERATOR--With the help of related organizations, the Beijing Chaoyang Machine Plant has successfully made a DCH-1 ultrapure hydrogen generator. It is suitable for extensive application in the field of environmental protection. The ultrapure hydrogen generator is an important result of scientific research completed jointly by the Institute of Chemistry of the Chinese Academy of Sciences and related organizations. This is a precise instrument, and is part of the equipment assembly of an atmospheric monitor vehicle. It uses electolytic water to make hydrogen of a purity of more than 99.9999 percent, to be used in high-precision analytic work. In environmental protection work highly pure hydrogen is needed to detect minute quantities of harmful gas. The ultrapure hydrogen generator can be used extensively in the field of environmental protection as well as in metallurgy, electronics, chemistry, national defense, and scientific research studies. On 6 November this year, the municipal Environmental

Protection Bureau asked specialists, professors, and engineers in related scientific research organizations, colleges, and users to inspect the improved prototype thoroughly. They all expressed the opinion that this instrument has reached an advanced domestic standard, while some of its indexes have reached international technical standards for this type of product, and it may be produced in quantity. [Text] [Beijing BEIJING RIBAO in Chinese 27 Dec 80 p 2] 6248

ZHEJIANG ANTIPOLLUTION REGULATIONS--The seventh session of the Fifth Zhejiang Provincial People's Congress has approved and promulgated Zhejiang Provincial temporary regulations on antipollution charges and fines. According to the regulations, a monthly charge will be levied on all units in Zhejiang whose pollutants' discharge exceeds the level specified in state and provincial antipollution regulations. The charge may be increased, decreased or eliminated according to the seriousness of the pollution and the quantity of pollutants discharged. The regulations also include a 17-point regulation on preventing environmental pollution. Violators of this regulation will be fined and principal leading persons of the fined units may forfeit 1-6 months of bonuses. [Hangzhou Zhejiang Provincial Service in Mandarin 0400 GMT 23 Mar 81 OW]

CSO: 5000

POLLUTION OF URBAN AIR, BALTIC SEA DESCRIBED

Silesian Urban Situation

Warsaw GLOS PRACY in Polish 23 Feb 81 p 4

[Article by Jadwiga Lorens: "Katowice in a Cloud of Dust"]

[Text] Stone bas-reliefs crumble as though made of sand. Tin parapets and gutters are etched with pinholes after only a few years. Trees die in such epidemic proportions that coniferous trees are replaced by deciduous varieties which are more resistant to industrial gasses and dust.

And man? How does he endure the noxiousness?

What Does Silesia Breathe?

On days when the air pressure is low, many Silesian towns are covered with smog. It is a dense, sticky mass from which there is no escape. On such days, there is more wailing of ambulance sirens in the streets and cardiologists provide emergency servies, as do other specialists. Bronchial conditions, asthma and emphysema are aggravated. Such ailments occur here more frequently than in other parts of the country.

Statistics of illness in Silesia are alarming. Ailments of the circulatory system occur here at a rate of about 15 percent over the so-called average, tumors are found at a rate exceeding the national level by approximately 30 percent, while respiratory illnesses exceed the national average by half. When construction was begun on the Lublin Coal Basin, many miners transferred to the newly established mines for reasons of the contaminated atmosphere in Silesia.

Sometimes it takes only a few months to cure them of the throat problems that had bothered them for years in Silesia.

The atmosphere is composed of oxygen (23.1 percent), nitrogen (75.5 percent) and small amounts (1.3 percent) of inert gasses as well as a minimum amount of carbon dioxide (0.05 percent). In Silesia this is purely theoretical. Chimneys exude clouds of noxious dust and poisonous gasses. In the course of a year, 6,917,000 tons of dust falls throughout the whole country. Of this, over 1.9 million tons, or 27.5 percent of the total amount, comes from small Katowice Voivodship, bristling with chimneys, which makes up less than 2.1 percent of the area of the country.

The emission of dust and gasses is not the same everywhere. There are towns in which there is simply no air to breathe. Dense clouds hang over Laziska. Two years ago the chimneys of this town emitted 48,897 tons of dust and 109,763 tons of gasses into the atmosphere, for the most part sulfur dioxide. The norm allows an emission of 250 tons of dust per kilometer of surface area in the course of 1 year. In most towns of Gornoslask Industrial District, this norm is exceeded fourfold. The amount of gasses in these towns exceeds the allowable norm by several dozen times.

People living near the Pokoj Works in Ruda Slaska and the Bobrek Works in Bytom do not ventilate their residence by opening windows or doors--the corridors act as dust filters.

Poisoned Lettuce

Researchers at the Institute of the Fundamentals of Environmental Engineering of the Polish Academy of Sciences [PAN] in Zabrze once revealed that certain vegetables raised in Silesia are especially toxic. This was corroborated by the Institute of Environmental Protection of PAN in Katowice. Among the most toxic vegetables are lettuce and carrots, which are eaten raw by many children. Those lands which are totally contaminated, producing poisonous vegetables, must not be cultivated. But until this time discussion of this subject has been forbidden.

The volume of dust and gas emissions is calculated with the daytime use of electrofilters. But it is no secret that this equipment is turned off at night, when the smoke soiling the air is not seen. This is observable even in downtown Katowice at early dawn, where some chimneys are wreathed in dark smoke which disappears by the time the city awakes. This is done to conserve electrical current, which the electrofilters use in great amounts.

Consequently, there are more poisonous clouds than the official statistics show. The official adherence to the data on the disturbing phenomena of atmospheric contamination and the elimination of broad social controls have helped to cause lethargy in matters of environmental protection. Thanks to this the voivodship authorities have permitted the deviations from the obligatory norms.

There Must Be a New Method of Accounting

Then, has anything been done to reduce this noxiousness in recent years? In the last 2 years, e.g., the emission of dust in Zabrze has been reduced by approximately 31,500 tons per year, while dust emission beyond the town's borders has decreased by 636 tons annually. Last year, the atmosphere of Zabrze contained approximately 1,730 less tons of sulfur dioxide. Many actions to protect the environment have also been conducted in Rybnik, Katowice and other towns.

But these tasks have not perceptibly reduced the emission of poisonous gasses and dust. The last Five-Year plan established the reduction of dust emission by 225,000 tons. Not only was this not achieved, but contamination of the atmosphere by dust increased by 125,000 tons. Moderate outlays were planned for environmental protection--1 zloty per 1,000investment zlotys. But even this was not implemented.

New technology in many plants, including several mills, rather than causing a reduction in gas and dust emissions, has increased them. In old plants nothing was done to protect the environment. The monies, remodeling potential and equipment were lacking. The new plants, assumed to be "clean," are also polluted. For these reasons, among others, the Katowice Mill seriously threatens the inhabitants of the town and the Ojcow National Park.

In the modernization of plants and in the construction f new plants, the method of accounting must ultimately be changed. We cannot enter efficiency into one column and losses resulting from environmental pollution in another. The time is ripe for a comprehehsive approach to environmental protection in Katowice Voivodship. The PAN scientific institutes in Zabrze and Katowice are proposing solutions. To date their studies have been ignored. What is needed now is a general report of the state of the Silesian environment, which can hardly be thought of as being in its natural state, and following this, quick action.

Baltic Sea Pollution

Warsaw RYNKI ZAGRANICZNE in Polish 23 Feb 81 p 5

[Article by Maria Strek: Will Baltic Waters Be Clean?]

[Text] The Baltic is a relatively small sea. It is a closed body of water, without a so-called open-sea zone. It is joined to the North Sea by means of narrow, shallow straits, which makes the exchange of waters considerably more difficult. The Baltic watershed area is among the most industrial in the world. Its moderate size and the proportions of surface waters to deep waters, as well as its salinity dissolution, determine its very limited potential for receiving pollutants. Thus the alarming state of the Baltic.

The Baltic states have proposed taking action against that which threatens the sea. As a result of a diplomatic conference concerning the protection of the marine environment of the Baltic Sea territory, held on 22 March 1974 in Helsinki, representatives of Denmark, Finland, the GDR, the FRG, Poland, Sweden and the USSR signed a convention which came into force on 3 May 1980. The parties have bound themselves to fulfill the proposals of this convention both in the area of the territorial sea which is under their respective jurisdiction and in external waters. The convention subjects all types of existing pollutants to inspection: ships, land sources and pollution caused by flooding and as a consequence of the exploration and exploitation of the sea bed. The coastal states are to cooperate bilaterally and multilaterally within assigned expanses of this sea area. Actions will be taken here in all cases of substantial oil spillage or the spillage of other harmful substances to fight against these pollutants and save the sea. The countries will also act in instances causing or having the potential to cause pollution, as well as in the event that such a situation is likely to exist.

The following are considered to be harmful materials and substances: heavy metals, radioactive materials, pesticides, detergents, oils and petrochemical waste, as well as floating substances, either suspended or sunken, which may disrupt the usage of the sea. The discharge of oil is prohibited, except in the event of

securing a ship's safety or of lifesaving operations on the sea. Ships sailing in Baltic waters are to keep any type of sewage, oily slime or dirty water, including ballast water and water from the washing of tanks on board ship, and are to drain such water only into collecting devices. They are likewise prohibited to discharge into the sea plastics, synthetic materials, paper, rags, bottles, wood, chemicals and other substances which may represent a danger to the marine environment. Undecontaminated sewage and sewage which has not been broken down may be discharged at a distance no less than 12 nautical miles from land (treated sewage may be discharged at a distance of no less than 4 nautical miles from land). The same regulations apply to the discharge of foodstuffs.

The effectiveness of tasks to prevent the pollution of Baltic waters depends not only on equipping our ships with devices to protect the environment, but also on how well equipped we are on land to receive pollutants, to a great extent. Unfortunately this situation at present is not the best.

Preventing the consequences of pollutants in the Polish segment of the sea area and coastline of the Baltic, and limiting and eliminating these pollutants is carried out by specializing plants—by the Marine Services Enterprises [PUM], the Port Service in Gdynia and the Ship Service in Szczecin. Their tasks include the collection of oily waters, trash and sewage from ships and the elimination of oleaginous products and solid waste from port channels and coastlines. Special small vessels known as collectors are used for this purpose (last year they removed 250 tons of oils and 340 cubic meters of solid waste from the Gdynia and Gdansk areas alone). The Gdynia-Gdansk team has five Soviet-made collectors, which should actually be enough. However, these are rarely all in working condition—often only one or two are working. The reason for this is repair problems and the chronic lack of replacement parts. In the event of an accidental petroleum or oil spill, pneumatic barriers are added to save the sea. These very effectively limit the range of such spills. The state of the barriers available to PUM is unsatisfactory and they are too few in number, while some may be used only once.

All of this means that the outfitting of enterprises with equipment for preventing the spread of pollutants is insufficient. While the purchase of new vessels is planned for 1981, it is a long road from the planning stage to implementation. The PUM enterprises lack the funds for the purchase of complete pieces of equipment and replacement parts.

In my opinion, the only rational solution is to allot a special fund earmarked for environmental protection. The matter is an urgent one because there is always the risk of damage on a larger scale, the consequences of which may still be possible to eliminate in 1981 with the use of present equipment, but which will be nearly impossible to control within a few years.

The equipment at the disposal of the PUM enterprises is, for the most part, worn out and obsolete. For example, it lacks the means of burning trash, which then must be transported to land and taken to city refuse dumps. Sewage collected from ships which lack suitable equipment is treated as city sewage. This situation is to be remedied shortly, however. On the strength of an understanding with the Sanitation-Epidemiological Station, one of the repair-construction shipyards has

begun to build four vessels (two for Szczecin and two for Gdansk) equipped with incinerators and Somo sewage treatment plants. They are to collect trash and sewage from ships. The immediate utilization of pollutants guards against potential epidemiological danger. Somo is a prototypical vessel and, although the project is already being implemented, it is difficult to predict when it will be completed. Specialists affirm that the production cycle will be a lengthy one.

The situation looks much better with regard to the treatment of oleaginous waters and the recovery of liquid fuels. Recently, in the Northern Port, production engineering began on a fuels recovery station (a ballast-waters treatment plant) to which oils collected from port areas, ballast waters and waste waters from the flushing of tanks are delivered.

While practically any ship may enter Polish ports (the Epidemiological Inspectorate sets certain standards with regard to epidemiological dangers), only those ships may leave Polish ports which have disposed of their cargo of trash, sewage and oily waters. The Marine Office conducts the inspections.

According to a decision of the government presidium dated 29 April 1977 concerning the implementation of the proposals of the convention, the conformance of ships with its requirements was to be completed in 1980. Unfortunately, this situation is still unsatisfactory, although all new vessels are constructed in accordance with the obligatory regulations. Equipment for ships serving the purpose of environmental protection (incinerators for burning fuel and lubricant wastes, ship-sewage treatment plants and bilge ballast-water oil separators) is mainly produced by the WARMA Pomorze Ship Equipment Plants. However, some of these are not in complete conformance with worldwide standards, others are not the right size for our smallest ships and some are designated for export. All of this causes delays in the adaptation of ships now in service, and also complicates the equipping of newly built ships with domestically manufactured equipment.

Only a few Polish ships have their own sewage-treatment plants. Most have only storage tanks, which fully suffice, assuming that port services operate efficiently. The situation is similar with the trash problem. In general, trash is stored; only a few vessels have their own, efficiently operating incinerators (e.g., UNIWERSYTET TORUNSKI). Polish-made oil separators [SP] do not pass the test; thus, ships are usually outfitted with imported equipment.

In conclusion, it should be pointed out that, throughout the area of the river basins of the Przymorze, Wisla and Odra rivers, there are as many as 82 major sources of localized pollutants and it is estimated that by the end of this year their number will grow to 126. The protection of our inland waters is closely connected with the protection of sea waters. Investing in various types of purification equipment has become a necessity without which we will not be able in the future to save our polluted environment--a task that will certainly become considerably more expensive.

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FISH KILLS SHOW NEED FOR AREA-WIDE ENVIRONMENTAL PLAN

Port-of-Spain TRINIDAD GUARDIAN in English 13 Jan 81 p 8

[Article by Trevor Yearwood]

[Text]

BRIDGETOWN: - UNITED NATIONS environmental experts investigating a series of phenomenal "fish kills" in the Caribbean have rejected toxic chemicals spills as the cause of the disaster, but think a lot more research needs to be done before a definitive answer can be given, Mr. Noel Brown, director of the New York Office of the U.N. Environment Programme (UNEP) said here.

Toxic spillage has been ruled because of the virtually Caribbean-wide nature of the disaster, leaving the experts with two possible causes: changes in the sea currents and in the water temperature of the region, Mr. Brown explained.

Several countries in the Caribbean, including Jamaica, Haiti, the Bahamas and Trinidad and Tobago recently reported the surfacing of millions of dead fish off their coast and an appeal was made to the United Nations to investigate the phenomenon.

A few days ago, marinebiologists working with Trinidad and Tobago's Agriculture Ministry, said they had failed to identify the source of the disaster.

"Initially, we suspected some kind of toxic chemical spill, that there may have been storage of hazardous waste in the region and some had somehow seeped," Mr. Brown told Cana.

But toxic waste could not explain the generalised nature of the disaster, he added.

"Our preliminary findings suggest two things: one — as a result of intensification of hurricane activity in the Caribbean recently, there may be changes in the current, and this could create some kind of shock effect.

"Secondly, and this is being investigated now, — the temperature of the Caribbean appears to have been changing positively by a few degrees the water seems to be getting a little warmer, and if that is the case, this could explain the phenomenon."

However, the UNEP could not at this stage claim to have a definitive answer, he pointed out.

ACTION PLAN

The Jamaican-born expert said the tragedy underlined the need for the Caribbean to have some kind of authoritative mechanism that can immediately study such problems and try to find decisive and authoritative answers.

However, steps are being taken. The major one is a Caribbean Action Plan by UNEP and the Economic Commission for Latin America (ECLA) - to be signed by Caribbean Governments later this year — for the protection and sound management of the region's environment, Mr. Brown noted.

The U.N. official is now on a Caribbean tour aimed at taking soundings on the plan and ensuring that it does not become "one of the better kept secrets" of the United Nations and ECLA.

The programme, to be formally

signed after three years of groundwork between officials from the developed world, the Caribbean and Latin America, underlines the need for built-in safeguards - in developmental programmes - against erosion of the environment and a mechanism to handle pollution problems of every type that might crop up in the regions.

Mr. Brown gave a run-down of the major threats to the Caribbean environment: oil pollution, overuse of chemicals, and destruction of the forest in an effort to beat high fuel import bills.

"There are clear and present dangers that must be watched, that must be monitored very, very carefully," he noted. One report that we suggest that the Caribbean Sea is the most damaged by pesticides of any in the world.

He added: "Although the marine activity of the Caribbean States may not be as intense as in other parts of the world, the land-based activities have direct environmental effects.

"We are an agricultural people largely and as a result of that the use of chemicals, fertilisers and pesticides is expanding. The agricultural run-off from these substances ends up in the Caribbean Sea.

THE ADVANTAGES

One of the crisis that was now beginning to receive attention was the extent to which the forests of the world were paying the added costs for fuel, he noted.

With most of the forests under the axe, problems relating to soil erosion and the survival of watersheds were cropping up.

But to beat the higher bills for fuel, triggered by rises in the cost of oil, the Caribbean had positive advantages — such as solar energy, wind power and biogas generation, the expert pointed out.

On whether or not the Caribbean had a full awareness of the threat to the environment caused by some of its developmental programmes, the expert said: "Environmental damage is only registered when it creates an inconvenience. We are not a people with a very strong maritime orientation and many of the damages remain invisible for a very long time."

He added: "Very few people are sampling, monitoring and testing the waters to assess the damages immediately."

But he emphasised that there had been a positive response from the Caribbean Governments to the action plan.

CSO: 5000

SDP SEEKS ASSURANCES ON TOXIC WASTE DUMPING BY U.S.

Nassau THE TRIBUNE in English 16 Jan 81 p 1

[Text] The Social Democratic Party today expressed concern that the Bahamas might be used as a dumping ground for hazardous toxic wastes.

Ashvins USA Inc of Alabama, the American press reported, is to barge its hazardous materials to an unnamed "Caribbean country," John Smith, public relations officer for Ashvins, was reported to have said that "Ashvins has a firm agreement with a foreign company, which has an agreement with their country's government to safely dispose of the wastes."

Although Mr Smith denied Ashvins has a contract to ship toxic wastes to the Bahamas, he admitted the firm is negotiating with a Bahamian company to build a waste incinerator in the Bahamas. This was reported in the Birmingham Alabama POST HERALD, January 12.

The POST HERALD also reported that Mr Harold Munnings, Permanent Secretary to the Ministry of Health, had said his office knew nothing about a plan to ship toxic wastes to the Bahamas.

The newspaper quoted Smith as saying he did not know whether the Bahamian company had contacted Bahamian health authorities to obtain permission to build the incinerator.

SDP MP Mike Lightbourn called to speak with Minister of Health Perry Christie to find out if he knew anything of the proposal. Up to 12:30 pm today Mr Lightbourn's call had not been returned.

The SDP wants the Ministry of Health to assure Bahamians that their country will not be used as a site to dump toxic wastes.

Mr Lightbourn noted that it was also reported in the HERALD POST that State Senator Earl Goodwin of Selima, an Ashvins director, had told the US State Department that his company planned to ship toxic wastes to the Bahamas by barge.

The HERALD POST also reported that Dr Donald King, director of the State Department's office of Environment and Health, had informed Bahamian Ambassador Reginald Woods of Ashvins plans on December 29.

Dr King was reported as saying the US Embassy in Nassau knew of the plans.

The SDP, in addition to calling on the Minister to confirm to the Bahamian public that no dangerous toxic waste materials will be dumped in the Bahamas, called on Mr Christie to launch an investigation to determine who has been negotiating with Ashvins "apparently without the knowledge or approval of the Ministry of Health."

CSO: 5000

LINES DRAWN IN BATTLE OVER UNDEVELOPED BEACHES

Bridgetown ADVOCATE-NEWS in English 17 Jan 81 p 2

[Text]

Conservationists trying to keep the remaining open beach front areas of Barbados free of tourism-related construction are likely to face stiffer opposition from south and west coast developers, a spokesman for the group, the Rev. Andrew Hatch, predicted yesterday.

The group, "Windows to the Sea" scored a major victory last year when Government backed its demands and refused to allow developers to construct a US$9.5 million hotel complex on west coast land adjoining the sea.

"It doesn't seem to be generally known that almost all the land on the south and the west coasts is already the subject of planning approval for development," Rev. Hatch said.

"People say that we should have eased off in the confrontation over the (west coast complex) site, but the battle would have to have been fought over some other site also approved for tourism or some other development."

He added: "You cannot put off the evil day."

Rev. Hatch's comments came shortly after the group presented cheques totalling US$112.50 to three secondary school students who won a national essay competition dealing with the environment: Lara Nathan, 11, Oneeka Williams, 14, and Dayne Phillips, 17.

The "Windows to the Sea" group has been stressing the need for developers to keep hotel construction off the beaches, offering Barbadians free access to them.

This takes place against the backdrop of what Rev. Hatch has repeatedly called the alarming rate at which hotel development was turning Barbados beaches into a "coralrete necklace".

Rev. Hatch yesterday rejected suggestions that the group's stand could harm tourism by frightening away investors.

"I believe that what we are suggesting will indeed in the long run be to the advantage of tourism, because we have consistently said that we are not anti-tourists, that the preservations of windows to the sea would allow Barbadians first of all, access to the sea.

"But thereafter when hotels need and will have to be built inland because of the lack of available sites on the coasts, even these hotels will have access for their guests to the coast, to the windows to the sea."

He added: "We don't conceive that our campaign has been extreme. I personally believe that there is enough building on our coast and I personally would favour an embargo on further building between the south coast road and the west coast road and the sea."

Rev. Hatch underlined what he said was the need for Government to re-institute some form of local government — "not necessarily the old vestry system" — which would give communities the chance to make their views known on issues affecting them.

A similar suggestion was made by a committee headed by Sir Mences Cox which reviewed the Barbados constitution.

But Rev. Hatch conceded that the conservation thrust was receiving support from the Government, whose latest statements stressed the need for developments to have built-in safeguards against environmental dislocation.

Prime Minister Tom Adams recently stated that while Barbados welcomed foreign investment, such would have to fit into the priorities of the island, respecting Barbados laws and the aspirations of its people.

"We do believe that Cabinet is aware that increasingly the community as a whole is aware of the need to preserve our environment, and within this our windows to the sea," Rev. Hatch said.

CSO: 5000

OFFICIAL CALLS FOR ENVIRONMENTAL REORGANIZATION

Kingston THE DAILY GLEANER in English 19 Jan 81 pp 6,13

[Letter from T. E. Aldridge, director of the Environmental Control Division, Ministry of Health, dated 13 January 1981]

[Text] The GLEANER's very timely series by A. J. Thomas on the destructive impact of pollution of our Jamaican rivers gave rise to your editorial on Saturday, November 29, which called on Government to approach environmental planning seriously with respect to the Martha Brae river and the Queen of Spain Valley.

In his subsequent article "Growth versus the environment" on Thursday, December 4, Franklin A. McKnight added further dimensions to the apparent dilemma of environment and growth, by emphasising that: "What is needed is not just a statement on the Martha Brae and the Queen of Spain Valley...but a new way of thinking about the environment...and a new attitude."

If, as I assume, this new thinking and attitude entails a serious national effort which is designed to be active, effective and adequate, then Franklin McKnight's identification of what is needed is entirely correct. Furthermore anyone who really has an understanding of how close we in Jamaica are to environmentally induced self-destruction, will know that if we do not begin to adopt this new approach in 1981, then we can prepare to write off our country as one of the casualties of the present decade.

The sad irony of the threatening environmental debacle in Jamaica is that as a people with so many aspirations for development we fail to see how our development is intrinsically intertwined with environment. The fact is that environmental management is as much a national need, as is producing food, providing employment, or finding markets for our bauxite and alumina, or educating our people.

We've Failed

Do those who decide our developmental priorities, and determine the strategies to achieve our objectives take account of the immense benefits of environmental management, to national productivity and the economy? What tourist industry can thrive in Negril or Port Antonio or any part of the island if beaches and coastal waters are fouled by sewage and industrial wastes? How can workers produce at their best if they operate in environments of poisoning chemical fumes and debilitating dust and noise?

What is the extra cost of treating Jamaican adults and children who get typhoid or dengue or gastroenteritis, or a number of respiratory and other diseases which are caused when faecal sewage mixes with drinking water, or mosquitoes breed in garbage piles, or communities are choked by dust and foul gases? How can we protect agricultural crops, or fish life or farm oysters unless we have effective environmental control?

Thus one can begin to see that a stage can be reached in Jamaica where all the earnings from our bauxite-alumina industry could be eroded by the destruction from pollution--unless we begin to manage our environmental affairs rationally.

With the designation of agencies such as the Environmental Control Division and Natural Resources Conservation Department in 1973, Jamaica made a very tentative entry into modern environmental management. However, in general, we have failed to monitor, rationalize, reorganize and upgrade the capability of public sector organizations in Central and Local Government so that they can really be effective in planning, monitoring, evaluating and implementing environmental projects and programmes.

International competition for environmental skills is so fierce, that it is extremely difficult to maintain competent environmental scientists, engineers, technicians and Environmental Health Inspectors, without a functional framework and reliable financial base.

Environmental attitudes and behaviour are so much a collective and individual way of life that some way has to be found to bring environmental awareness into our schools, our work places and our public and private lives.

Urgent Steps

A new approach towards environment would see environmental information and education becoming standard features of our education system, our mass media, and our information services. A specific Environmental Protection Act is required.

To my mind, however, the most urgent steps at the beginning of 1981 entail the following: We need a Ministerial Council for Environment and Development preferably chaired by the Minister responsible for Planning. This council would be distinct from the present Environmental Protection Advisory Council, the latter having room for representation from the public sector, the private sector, institutions, interest groups, trade unions, and the community.

The designation of a specific ministry as having prime responsibility for environment is essential for an orderly and effective focus on environment. Because of problems of conflicts of interests this ministry should not be one engaged in polluting activities such as mining. Furthermore the Environment Ministry should be one that is prepared to undertake the responsibilities fully. At the local authority level the KSAC and the Parish Councils should be brought into the stream of modern environmental management by the establishment of local departments of Environment and Food Sanitation.

One opportunity which Jamaica must seize stems from the fact that Environmental Control is one of those public sector enterprises which can be self-supporting and economically efficient. An agency such as the present Environmental Control Division should be within the Environment Ministry and for financing and practical reasons should be established as a statutory Environmental Control Agency.

Surely developments like these are not beyond a nation which is sane and not bent on suicide! When citizens demonstrate against pollution in Spanish Town, when oil tanker drivers park their tankers in protest against pollution, when dirty water flows from the taps of a hospital, when despairing citizens close down the country's largest bauxite-alumina plant, and when other weary citizens close down another major plant, in a matter of two weeks, surely the time for the new approach has come.

CSO: 5000

RESIDENTS PROTESTING DUST HALT ALCOA PLANT OPERATIONS

Clarendon Blockade

Kingston THE DAILY GLEANER in English 13 Jan 81 p 1

[Text]

OPERATIONS AT THE ALCOA alumina plant at Halse Hall, in Clarendon, were brought to a virtual standstill for most of yesterday as demonstrating residents blocked the gates to the plant, preventing employees from entering or leaving, in a protest against dust emanating from the plant.

The demonstration was called off late afternoon after the citizens were addressed by Member of Parliament for the area, the Hon. Hugh Shearer, Deputy Prime Minister. It is understood that Mr. Shearer and the residents will meet with the management of Alcoa next week to discuss the issue.

The residents early yesterday morning assembled at the plant gates and quickly threw up a blockade that forced staff on the graveyard shift to remain inside the gates and those reporting on the morning shift to stay outside. Police rushed to the scene and kept a watchful eye on the demonstration.

Equipment

A spokesman for Alcoa said yesterday that the company had been working diligently to improve the situation with regards to the dust that the citizens say was destroying crops and property.

The Alcoa spokesman said that in an effort to reduce the dust from the plant, the company had recently put into operation a US$75,000 "super sucker" to absorb dust and was now in the midst of installing additional dust emission control equipment in a project costing US$1 million.

Angry citizens pledged to continue their demonstration until the dust problem was corrected. They refused to budge from their position after meeting with the plant manager.

Mr. Shearer rushed to the scene after hearing reports of the demonstration. He assured the citizens in an address that the matter would be investigated with urgency. They dispersed after Mr. Shearer's address, allowing the 4 p.m. shift to relieve the "locked-in" workers.

Kingston THE DAILY GLEANER in English 17 Jan 81 p 8

[Editorial: "For the Environment"]

[Text] The protest demonstration by citizens of Clarendon on Monday, which almost led to the shutdown of the Alcoa alumina plant focuses attention on a part of the national life, largely considered as esoteric by the majority of the population. Indeed, it has been treated to little more than lip service by political administrations as well. We refer to the important, and highly developmentally relevant subject of the environment.

Periodically, there have been isolated complaints about the effects of pollution, especially that originating from industrial activities, but there has been little sustained effort, and an environmental lobby or pressure group is so far unknown in this country.

The issue of the pollution of Kingston Harbour by sewage and industrial waste, for example, has elicited comments from isolated scientists, but up to now, there has been no concrete action to deal with this situation, though Government appointed bodies have shown interest.

In fairness to organizations, such as the bauxite companies, there have been some attempts to deal with specific situations, but there has never been an overall plan to deal with the interrelated sources and consequences of environmental problems.

We suspect that part of the problem is the frequent failing of enlightened scientists to state fully, the case for proper environmental management and monitoring. Too often, the problem is represented as the possible decimation of species of plant or animal life, with only a slight stress on the economic and human consequence of the reckless handling of the environment.

In this context we see the current Caribbean Action Plan for the environment, developed by the United Nations Environmental Programme, and the Economic Commission for Latin America, as offering a good opportunity to break out of this mould.

The programme, which seeks to deal with all aspects of the environment, as they relate to the human state, economic development, and aesthetic values, was presented in September last. It envisages establishing the framework in which over 30 countries and territories of the Caribbean can pursue "environmentally safe and sustainable growth."

The two co-operating organizations have expressed their willingness to take the initiative in providing initial support to the extent of about (U.S.) $5 million, to provide for the establishment of a regional co-ordinating unit.

But it is not expected that these agencies will be able to fund or implement the entire programme, which we understand would cost about (U.S.)$100 million. A Regional Trust Fund is envisaged, which would seek to raise the necessary capital from participating countries and governments.

Clearly, the programme will only succeed to the extent that the beneficiaries are committed to it, and we would suggest that in shepherding this interest great stress be placed on presenting the hard facts as they relate to human life and economics.

We note that the Government of Jamaica has renewed the offer to host UNEP and ECLA-sponsored meeting on the Caribbean Plan at the end of March.

We hope that this is the first step in the long road to full recognition of the importance of a proper programme of environment management and monitoring.

CSO: 5000

RISKS OF SERIOUS CONTAMINATION TO PARAGUAY RIVER

PY141655 Asuncion HOY in Spanish 13 Apr 81 p 21

[By correspondent Santiago Leguizamon]

[Excerpt] Pedro Juan Caballero--A vast campaign aimed at protecting the Brazilian El Pantanal area in Mato Grosso do Sul State directly affects Paraguay. The vast Brazilian campaign aimed at protecting El Pantanal area has drawn the attention of the inhabitants of this border town. A declaration issued in the town of Dorados, Mato Grosso do Sul State, points out among other things that: "The Mato Grosso people and remaining Brazilians repudiate and by all possible means protest such a daring aggression against the fatherland's territory by the Bodoquena project and vehemently protest the irresponsible and criminal intentions of establishing innumerable plants for the production of alcohol to be used as fuel in the Pantanal area in Mato Grosso do Sul State.

The Mato Grosso do Sul Pantanal area occupies 200,000 square kilometers and it is one of the world's most important ecologic reserves. It has one of the most complete and complex combinations of fauna and flora and causing their imbalance would be irreversible.

Sugar cane monoculture is highly destructive to any life within its environment and the use of fungicide and herbicide is highly toxic for the animals and plants.

An important alcohol-producing plant produces a great volume of highly pollutive dregs which absorb great quantities of oxygen from the water and thus kill the fauna in the water.

The destruction of the Pantanal area will mean the destruction of the Paraguay River source which in turn will alter our country, Bolivia, Argentina and Uruguay. The result would be a useless and poisoned river.

CSO: 5000

BRIEFS

CONSERVATION ASSOCIATION--St. Lucia has become the 10th government member of the Caribbean Conservation Association (CCA), the CCA announced yesterday. St. Lucia joins Barbados, the British Virgin Islands, France (Antilles-Guyane), Dominica, Grenada, Guyana, Montserrat, St. Kitts-Nevis and Venezuela and, in rotation with representatives of those countries, will take its place on the CCA's board of directors. [Text] [Bridgetown SUNDAY ADVOCATE-NEWS in English 18 Jan 81 p 3]

CSO: 5000

BRIEFS

OIL PIPELINE SPILL--Heavy rain on Saturday thwarted oil salvagers from recovering barrels of crude oil which escaped from a main leading to the Texaco Refinery at Pointe-a-Pierre. The rain washed the crude from San Fernando By-pass down to Vistabella River and into the Gulf of Paria. It is feared that if unchecked, the crude will spread to the marina at Vistabella and also the fishing grounds in the area. Fishermen have already voiced their disgust over the spill, and have called on the Minister of Energy, Mr Errol Mahabir, to "move expeditiously and take the necessary steps to have the oil cleared from the sea." The spill occurred in the vicinity of San Fernando Technical Institute, and more than 5,000 barrels of crude from Forest Reserve, Fyzabad, oozed from the main because a bleed valve was removed on Thursday night. Operation mop-up by Texaco personnel recovered more than 80 per cent of the spill, but heavy rain all day Saturday caused an overflow of the emergency catchment basins and oil flowed to Vistabella River and straight to the Gulf. Because of the situation, Rep. Mahabir spoke to Texaco officials about the oil reaching the sea. The Minister also contacted two senior officials in the ministry and briefed them on the matter. Texaco is expected to make an aerial survey to see what could be done to prevent the oil from spreading and also to take up the crude on the surface. That action was expected to start yesterday. [Text] [Port-of-Spain TRINIDAD GUARDIAN in English 12 Jan 81 p 7]

CSO: 5000

POLLUTION BIG THREAT TO GULF

Hong Kong SOUTH CHINA MORNING POST in English 18 Mar 81 p 5

[Text]

Kuwait, Mar 17.

Modern oil rigs and factory chimneys sprouting along the Gulf littoral are so aggravating problems of chemical and thermal pollution that one health minister has declared the region faces real hazards from land, sea and air.

Kuwaitis have taken their anti-pollution warfare a bit further, mobilising funds for scientific research on ways of combating the Tauz dust-storm, a problem older than the oil industry.

The Kuwait Foundation for the Advancement of Sciences has urged neighbouring states on the Gulf shoreline to join the fight.

"The money is there in abundance, but we need collective action to combat pollution," said the foundation's director-general, Adnan al-Aquil.

"If the pollution menace is left unchecked, it would unfold disasters for Kuwait and other countries of the region."

Kuwait has invested millions of dollars in vast fish and shrimp industries and, like its neighbours, relies on the Gulf for most of its drinking water, produced through desalination units.

Saudi Arabia, Qatar, Oman, Bahrain, the United Arab Emirates, Kuwait, Iraq and Iran had agreed to pool money and efforts in the war against pollution. That campaign is now among the casualties of the Iran-Iraq war.

To combat Tauz, Kuwait has earmarked an initial US$500,000 (about HK$2.65 million) for research on the origin and nature of the dust-storm, originally believed to blow in from Saudi Arabia and Iraq.

"Preliminary studies have shown that at least 80 per cent of the Tauz come from Kuwait itself, and the remaining 20 per cent from Saudi Arabia and Iraq," Mr al-Aquil said in an interview.

"Efforts are continuing and it is too early for us to say if the problem can be overcome decisively."

Tauz, he said, turns the sky red during the sweltering summer months, sends tiny grains of sand into city structures and "shortens the lifespan of electronic equipment." Losses are enormous, he complained.

One project sponsored by the foundation calls for employing laser-operated radar networks to measure air pollution, said Mr al-Aquil.

Bahrain has a project for combating seawater pollution caused by oil spills in the Gulf.

A recent spill, originating in Saudi Arabia's eastern offshore oilfields, caused alarm around the Gulf. The slick kept floating perilously near Bahrain, the UAE and Oman until it finally plunged near the Strait of Hormuz, where it was almost two metres thick.

The director of World Information Systems, Richard Golob, was quoted as warning that oil pollution in the Gulf will increase dramatically over the next decade unless preventive action was taken.

Mr Golob said studies had estimated the total amount of oil pollution in the region during 1979 was 144,000 tons.

—AP.

CSO: 5000/4911

BRIEFS

WOLLO REGION RAIN DAMAGE--Dessie--Heavy damages were caused to property and animal lives as a result of torrential rains in Awsa province of Wollo region recently. Sixty-six residential houses were demolished while 12,041 sheep and goats, 142 camels and 181 heads of cattle were washed away by floods. A total of 289 cattle raisers in five villages have been affected by the natural calamity, the regional office of the Relief and Rehabilitation Commission disclosed. Aid is being given to peasants whose properties have been destroyed while a medical team has been assigned to look after the health of the victims. The areas highly damaged by the rains are Mile, Alidar, Eliwuba and Assaita localities. [Text] [Addis Ababa THE ETHIOPIAN HERALD in English 19 Mar 81 p 6]

REFORESTATION ACTIVITIES--Harar--Reforestation activities are progressing rapidly on the Dindin Mountains in Hararghe Region where formerly private and now state owned woodworks are showing considerable promise. A total of 1,488,000 trees have been planted in the area under the auspices of the Regional Forestry and Wildlife Development and Conservation Department in the past four years. The newly planted trees spread over 930 hectares. It is hoped that the reforestation programme will make up for the loss of trees as result of industrial use and the practice of shifting cultivation. Comrade Girma Gebre-Meskel, a representative of the Regional Forestry and Wildlife Development and Conservation Department, and an official of the regional peasants' association recently held discussions on the scene with concerned persons to intensify the reforestation campaign. Measures that should be taken to prevent and control possible forest fires were also examined. [Text] [Addis Ababa THE ETHIOPIAN HERALD in English 17 Mar 81 p 5]

CSO: 5000

TSUMEB CORPORATION ANSWERS QUESTIONS ON HARMFUL SUBSTANCES

Windhoek WINDHOEK OBSERVER in English 28 Mar 81 p 29

[Text] **TSUMEB: Did the Town Council of Tsumeb in the past take a 'soft' line towards the Tsumeb Corporation Limited and did a number of Councillors in the employ of the Corporation go out of their way to protect any unfavourable criticism about alleged dangerous fallout from both the slime dumps and the smokestacks of the smelter plant ? To these and other questions, satisfactory answers were given following a number of complaints lodged at the fallout of sulphur dioxide from the smokestacks and of course fine dust from the slime dumps even containing a fraction of arsenic, were endangering the environment.**

The Town Clerk, Mr. Okkert Britz said in an interview which was attended by the Town Engineer Mr. Ruald Godô, that the allegations about dangerous substances in the area dated back to a long time ago. Regularly scientific missions were sent to Tsumeb to assess any adverse substances in the atmosphere. Proper tests were carried out and the findings of these scientific missions were invariably that no poisonous substances were present, at least not to such an extent that it constituted a health hazard.

Mr. Britz confessed that on windy days like in the latter half of the year, there was a dust problem which caused inconvenience to the industrial area of the town. He could not speak for the Corporation, Mr. Britz said, but he understood that Tsumeb had enlisted the duties of a fulltime engineer who was to give his attention to the particular problem. He did hear, and this was confirmed by the Town Engineer, that plans were to be made to cover the mine dumps, either with grass or some other substance. The Municipality was satisfied that the Corporation were probably monitoring atmospheric conditions for fallout. In fact, there were several dozen of these monitoring stations, he said. Mr. Britz then remarked that the van Eyck station at Windhoek posed a greater health hazard than the Tsumeb smokestacks.

Mr. Godô explained that atmospheric conditions, for example low cloud, did have an affect on fallout.

GOOD LIAISON

Mr. Britz dismissed suggestions that his Town Council bows to the wishes of Tsumeb Corporation. After saying that the best of liaison was in existence between his Council and the Corporation, he said that only three of his Councillors were associated with the Corporation in that they were employed by it.

This town, he said, owed a lot of gratitude to the Corporation for what it was doing, for all residing in Tsumeb.

But it was the General Manager of the Tsumeb Corporation, Mr. Bob Meiring, who fully explained the situation. Present was one of his top engineers, Mr. Ronnie Gevers, and Mr. Meiring explained that the cost to the Corporation to probe and analyse atmospheric conditions amounted to an estimated R25 000,00 a month. It was a scientific computerised system.

"My children are breathing the same air and I can assure you that scientific data, which is the result of regular analysis, done by scientists from outside, yields a satisfactory result as to the conditions of health"

Mr. Meiring said that the concentrates which were processed in the smelter plant did contain sulphide. This applied equally to copper and lead concentrates. Once these concentrates were converted, something must happen. It followed naturally, Mr. Meiring said, that sulphur dioxides were being emitted by the smokestacks. But way back when the Corporation was faced with a major expansion in its smelter plant five years ago, environmental studies were called for.

REGULAR CHECKS

Rising from his chair and walking to his blackboard, Mr. Meiring said that one of the stacks was 450 feet in height and the other 475 feet the highest in the entire country. Scientific studies were carried out and were still conducted and would continue to be conducted in the field of fallout. Thus, at one stage Professor P.D. Thyssen of the Department of Geography and Environmental Studies at the Wits University carried out a survey. Mostly scientists of the Council for Scientific and Industrial Research aided by Health officials, were responsible for the regular checks.

Tsumeb Corporation had met thusfar all the standards and requirements laid down, both by the health authorities and the prescriptions of scientists. Naturally, Mr. Meiring said, changes in atmospheric conditions could result in people smelling a fallout as far as Oshikoto but these were infrequent and still well within the confines of what constituted a health hazard.

Thirty monitoring stations had been put up to continually assess the atmosphere. Mr. Meiring made a sketch on the blackboard where he calculated and showed the results carried out by the Air Pollution Research Group of the Council for Scientific and Industrial Research. He also provided the Observer with a map called an isopleth map which shows the areas in the atmosphere affected by fallout. All data was computerised and the results showed that the Corporation was well within the boundaries of the prescriptions of the World Health Organisation. Tsumeb residents were living a healthy life.

Mr. Gevers said, that he could not recall the exact time but meteorologists of the Max Plank Institute near Oshikoto were in the area to conduct a survey for the institutes ionospheric studies.

They were not assigned by the Corporation for a scientific survey but the renowned meteorologists later communicated with the Corporation to tell them they were absolutely surprised by the limited traces of pollution they picked up high in the atmosphere.

In the northern industrial area occupants of holdings complained about the dust which they said required them to put on their car headlights when the wind was really blowing.

One of them told how, a number of years ago, conditions of drought forced large flocks of flamingoes to leave the Etosha Park, arriving one night at Tsumeb. The birds made for the slimedam and all of them were poisoned.

CSO: 5000

RAINFALL MAKES HUNDREDS HOMELESS IN ILORIN

Kaduna NEW NIGERIAN in English 25 Mar 81 p 13

[Article by Olu Omole]

[Text] HUNDREDS of inhabitants in Ilorin, Kwara State capital were last week-end rendered homeless following a heavy rainfall that was preceded by a strong wind which swept through the town.

The most affected areas include Abdul Azeez Atta Road, Agbo-Oba Quarters, Ita-Amodu Quarters, Amilegbe Road, Okin Quarters and Omoda area. Some schools were also affected.

The rain which started at about 6.30 p.m. on Thursday lasted two-hours and did a great damage.

Roofings of most of the affected houses were completely blown off while some buildings were pulled-down.

Occupants of the affected houses did not bother to go to work the following day which was Friday, but were busy packing out of the houses.

None of the victims was reported dead or hurt during the incident.

Electric poles and trees along the streets were not left out during the incident. Some of them were totally uprooted.

Part of the Abdul Azeez Atta Road, which is now under construction was washed away and as a result, several houses on the street were flooded.

Some primary school children were sent back home when they got to their schools on Friday morning as the roofings of their classrooms were blown off.

It was the second time rain fell since the beginning of the year. The first rain fell about a fortnight ago but did no havoc.

CSO: 5000

PHYSICIAN DESCRIBES POLLUTION'S EFFECT ON HUMAN ORGANISM

Tallinn SOVETSKAYA ESTONIYA in Russian 6 Feb 81 p 2

[Article by O. Tamm, chief state sanitary physician of the Estonian SSR: "Health, Economics and Nature"]

[Text] Environmental protection is a complex and multifaceted issue, in which the main objective is the preservation of human health and the creation of favorable conditions for work, daily life and leisure.

The pollution of natural resources results in the deterioration of the sanitary conditions of public life, the spoilage and corrosion of various materials, the reduction of the yield of agricultural crops, the spread of disease in animals and the death of vegetation. Therefore, the damages inflicted by environmental pollution affect the interests of various branches of the national economy; the item of the greatest socioeconomic significance, however, is the health of the population. Although it would be difficult to calculate the damages connected with the deterioration of hygienic conditions and human health in precise and specific monetary terms (health is truly priceless), expenses connected with illness can be calculated. And these expenses are quite often paid by society.

The human organism has effective defense mechanisms to ward off the effects of harmful substances. According to some data, however, around 4,000 new chemical compounds have recently been entering the environment each year. Under these conditions, the organism's defensive strength could be overtaxed. For example, mercury compounds (non-organic and non-stable organic) in the environment could turn into methyl-mercurial compounds and enter foodstuffs. This is why it is so important to guard the purity of rivers and lakes against household and industrial sewage containing mercury compounds.

Such substances as DDT ("dust") could heighten the effectiveness of enzymes. It is known that this property is one of the reasons for the reduction of the earth's bird population, as heightened estrogenic activity inhibits the metabolism of calcium in the organism of birds, which makes eggshells thinner and more likely to break prematurely during roosting. By a government decree, the transport of DDT solutions into our republic has been prohibited since 1967. Its production in the nation was stopped in 1970.

The main sources of environmental pollution have always been industrial enterprises and electric power stations operating on hard fuel. Each year billions of tons of

various ores and construction materials are extracted from the depths of the earth throughout the world, and around 90 million tons of mineral fertilizers and 2 million tons of toxic chemicals are utilized. As a result of industrial processing, hundreds of millions of tons of carbon monoxide, sulfur dioxide and ash enter the air.

The draft report of the CPSU Central Committee to the 26th party congress contains a special section on nature conservation measures, in accordance with which they will be considerably expanded and made more thorough and purposeful. Much was done in our republic to improve the environment during the years of the 10th Five-Year Plan. The huge sums spent produced definite results. Nevertheless, many disturbing problems still exist. Enterprise administrators still tend to view conservation measures as matters of secondary importance.

In order to prove (and this was accomplished) the urgency of appropriate and, what is more, immediate steps to improve the environment, an extremely important and time-consuming job was performed on the instructions of the Estonian SSR Ministry of Health. It was performed by researchers from the Tallinn Scientific Research Institute of Epidemiology, Microbiology and Hygiene in conjunction with physicians from the republic and Kokhtlya-Yarve sanitary and epidemiological stations who were studying the effect of the air in the shale basin on human health.

A law which went into effect this January contains a number of important provisions pertaining to environmental protection. In particular, it prohibits the use of discoveries, inventions, efficiency proposals, new technical systems, technological processes and facilities which do not meet the requirements of atmospheric protection standards.

The decree of the republic Communist Party Central Committee and the Estonian SSR Council of Ministers "On Additional Measures for the Stronger Protection of Nature and the Better Use of Natural Resources" obligates ministries, departments and enterprises of union jurisdiction to set maximum emission standards for pollutants in the next 2 years. This work has commenced at a number of enterprises, but not by any means at all of the ones responsible for pollution, particularly the pulp and paper combines in Tallinn and Kekhra and the chemical plant in Kiviyli.

The air is still being seriously polluted by the Slantsekhim Production Association, the Baltic GRES, the Kokhtlya-Yarveskaya TETs, the Punane Kunda Cement Plant, the Kukke Lime Plant and the Maardu and Kiviyli chemical plants. What is more, no changes have been brought about by the fact that the administrations of these enterprises have been repeatedly fined by the sanitary service or that the heads of ministries with jurisdiction over these enterprises are aware of the present state of affairs.

The degree to which the city's air is polluted by motor transport exhaust constitutes a serious problem. According to the data of the sanitary service, the concentration of carbon monoxide on the sidewalks of the main streets of Tallinn, Narva and Kokhtlya-Yarve is sometimes considerably in excess of the permissible limit.

The system now being used at enterprises to monitor the carbon monoxide content of motor transport exhaust does not present any real obstacle to the production of

vehicles with a defective fuel system and they race through the streets with long bluish-black trails of exhaust behind them.

A recent inspection to verify the observance of the decree of the Estonian SSR Council of Ministers "On Measures for the Stronger Protection of the Baltic Sea Against Pollution," conducted by the Estonian SSR People's Control Committee and other republic services, revealed disturbing incidents. It was learned that the Kiviyli Shale Chemical Plant, the Azer Ceramic Plant and the Kokhtlya-Yarve Dairy Product Combine had not fulfilled government assignments regarding the cessation of the dumping of untreated sewage. Due to the improper operation of Yykhvi purification equipment, swimming in the Toyla-Oru has been prohibited for several years. A suit against the officials concerned has been filed with the procurator by the state sanitary service.

It is also no secret that the transport, acceptance, storage and use of petroleum products, to put it mildly, are far from irreproachable. The collection, storage and use of previously utilized lubricants and petroleum products constitute a special problem.

The development of agriculture has been accompanied by the increased use of mineral fertilizers and toxic chemicals. Their incorrect use and storage can pollute the soil and bodies of water, from which the harmful substances could then enter supplies of drinking water. Many storage facilities in the republic do not meet sanitary requirements. For example, this led to the pollution of many sources of water in Kingiseppskiy Rayon.

The incorrect dusting of fields with pesticides from the air also causes considerable damage (if meteorological factors are not taken into account and the recommendations of the sanitary service are disregarded). There have been cases in which individual farms have suffered losses as a result of this.

The problem of decontaminating transport vehicles after the shipment of toxic chemicals has not been solved either.

Effective steps must also be taken to correct the present situation in which the operational process at the majority of dumps does not guarantee the decontamination of garbage; fires are common in dumps, and this is an additional source of air pollution.

The draft plan submitted to the 26th congress by the CPSU Central Committee stipulates the need for improvement in state control over the use of natural resources and the protection of the environment. In light of this, we believe that it will be necessary to first clarify the forms and methods of interaction by various service responsible for supervising conservation measures, and to improve the system for monitoring and controlling the condition of air and water.

When modern purification equipment is being built, the administrators of enterprises and organizations responsible for the technical condition of this equipment must be made more accountable for the results. It will also be necessary to expand the socialist competition among enterprises for environmental protection and to fulfill assignments envisaged in plans.

We are certain that the CPSU Central Committee's draft basic guidelines for economic and social development will stimulate more vigorous conservation activity by ministries and departments.

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CSO: 5000

HARMONIOUS INTERACTION BY MAN, NATURE DEFINED

Moscow IZVESTIYA in Russian 7 Feb 81 p 3

[Article by Yu. Israel', chairman of the State Committee of the USSR for Hydrometeorology and Environmental Control and corresponding member of the USSR Academy of Sciences: "In Harmony with Nature"]

[Text] The intensive development of the national economy in the 10th Five-Year Plan elevated the problem of the intelligent use of natural resources and the protection of the environment to the level of a major state objective. The decisions of the 25th CPSU Congress, the introduction of a special article into the new Constitution of the USSR and the adoption of several extremely important laws and decrees aimed at the protection of nature, the efficient use of natural resources and the allocation of tremendous sums--this is the basis for the guaranteed high quality of the environment with the simultaneous acquisition of maximum resources from nature for the satisfaction of the Soviet individual's needs.

A broad group of practical measures was instituted at the nation's industrial enterprises to ensure the reduction of harmful substances in the atmosphere. Capital investments financed the incorporation of a large quantity of scrubbers and dust traps with a total capacity of around 150 million cubic meters of gas an hour.

As a result of these measures, the content of harmful substances was noticeably reduced in the atmosphere of Alma-Ata, Arkhangel'sk, Bratsk, Berezniki, Dnepropetrovsk, Voskresensk, Kazan', Krasnoyarsk, Omsk, Chimkent, Ust'-Kamenogorsk and other cities.

Steps were also taken in the nation to improve the technological process in the main production areas. Great progress was made in the conservation of water resources in industry by means of the widespread introduction of water recycling systems. Between 1976 and 1980 the proportion accounted for by recycled water (in industry's total water consumption) rose from 55 to 64 percent, and the savings in fresh water on the nationwide level increased from 140 billion cubic meters in 1976 to 200 billion in 1980.

The dumping of polluted sewage was considerably reduced. In the last 5 years, several thousand large industrial complexes with sewage treatment facilities began operating. The capacities of sewage treatment plants have been augmented by 43 million cubic meters of water a day. Much was also done to equip ships with

facilities for the dumping and purification of sewage containing oil and various liquid and solid waste.

All of this has had a favorable effect on the state of many natural bodies of water--the quality of water has improved in the reservoirs of the Volga cascade, in the basin of the Ural River and the Lena, Neva, Kuban' and Miusa rivers, in lakes Pskovsk, Chudsk and others, and in the Black, Baltic and East Siberian seas.

During the 5 years, much was done to establish protective forest strips, to terrace steep slopes, to construct defensive structures to guard against erosion and mud slides, to recultivate land, to regulate run-off and to redistribute it among basins, to augment the air protection of forests against fire (in 1980 it extended to almost 900 million hectares), to increase the quantity of natural preserves, game refuges and national parks, to increase the reproduction of valuable commercial fish and certain types of animals and to increase the extraction and comprehensive use of mineral resources. Many other positive results of the nature conservation work can be cited.

During the years of the 10th Five-Year Plan, a statewide service for the observation and control of environmental pollution was established and developed. At present, atmospheric pollution is being monitored in more than 450 Soviet cities by this service, its system of surface water quality control extends to all of the nation's main bodies of water and its system of maritime pollution control extends to all of the inland seas of the USSR and the seas surrounding it.

During the last 5 years, special attention was given to the development of an observation and control network in regions of intensive economic development, particularly Siberia and the Far East. Comprehensive observations were launched on an extensive scale in the construction zones of the Kansk-Achinsk fuel and energy complex, the Baykal-Amur Trunk Line and other major territorial industrial complexes.

In 1979 and 1980 the State Committee for Hydrometeorology and Environmental Control organized, in conjunction with USSR ministries and departments and union republic councils of ministers, the classification of sources of harmful emissions at all enterprises in the nation. The summarization of this information will serve as a basis for state plans for atmospheric protection measures and the determination of maximum emission standards.

Organizations of the State Committee for Hydrometeorology and Environmental Control began to perform the functions of appraising layout designs, technical and economic specifications and plans for the construction and remodeling of enterprises with a view to the observance of requirements concerning the prevention of atmospheric pollution, including operations at nuclear power engineering enterprises. Total expenditures on environmental protection in the nation amounted to around 26 billion rubles in the 5 years, including more than 10 billion in centralized state capital investments.

Nonetheless, shortcomings exist in the conservation work. For example, capital investments allocated for air protection measures were not utilized in full by a number of ministries--the Ministry of Timber and Wood Processing Industry, the Ministry of Tractor and Agricultural Machine Building, the Ministry of the Chemical

Industry, the USSR Ministry of Ferrous Metallurgy and the USSR Ministry of Non-Ferrous Metallurgy. It should be noted that the USSR Ministry of Power and Electrification has still not ensured the start-up of large facilities to trap sulfur dioxide in heat and electric power stations.

The institution of even large-scale conservation measures in a specific city or industrial region by isolated ministries cannot always guarantee the considerable reduction of average pollution levels because the emissions of enterprises of other jurisdiction could stay the same or even increase.

In connection with this, it will be necessary to guarantee the comprehensive coordination of sectorial and territorial plans for conservation measures.

The present correlation of funds invested in the purification of water and air cannot be regarded as optimal either.

In some rayons, the construction of sewage treatment facilities is taking too long, and this also applies to the fulfillment of anti-erosion measures, the terracing of steep slopes and the establishment of protective forest strips.

It is important to note that the indicator of "reduced total harmful emissions" was added to the list of draft plan indicators in 1981. Total emissions in our nation in 1981 are to be 1.2 million tons less than in 1980. Throughout the USSR as a whole, the proportion of solid particles extracted from atmospheric emissions will rise to almost 90 percent in 1981.

The volume of untreated sewage dumped will be reduced considerably, and this will guarantee the continued improvement of the sanitary and hygienic condition of the Black, Azov, Baltic and Caspian seas, the Volga, Ural, Dnepr and Don rivers and a number of small rivers.

Plans also call for the establishment of around 50,000 hectares of protective forest strips. In 1981 the land on an area exceeding 1:5,000 hectares is to be recultivated.

More than 1.7 billion rubles in centralized state capital investments and a total of over 6 billion rubles in investments will be used to finance a broad group of conservation measures specified in the plan for 1981.

Massive operations in the area of conservation are also envisaged for the 11th Five-Year Plan as a whole. A special section of the CPSU Central Committee draft plan submitted to the 26th party congress is devoted to this topic. Action will be taken to preserve agricultural land, speed up the construction of water conservation facilities in the most important basins of a number of seas, improve technological processes with a view to reducing the emission of harmful substances into the atmosphere, expand protective afforestation, continue the development of the scientifically sound network of natural preserves and national parks and develop the work connected with the establishment and improvement of systems for surveying natural resources.

The final draft of this special section should stress the need for a more intense struggle against environmental pollution, for control over the condition of the

environment and for the regulation of the quality of the atmosphere and bodies of water.

The party Central Committee has drawn up a truly historic document for the 26th CPSU Congress. It sets forth an extensive program of operations to assist in human society's harmonious interaction with nature under the conditions of intensive national economic development in coming years.

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CSO: 5000

COASTLINE CONSERVATION PLANS OUTLINED

Tbilisi ZARYA VOSTOKA in Russian 18 Feb 81 p 2

[Article by Professor V. Zenkovich, chief of the Coastal Dynamics Laboratory of the Institute of Geography imeni Vakhushti of the Georgian SSR Academy of Sciences and holder of the Lenin and State prizes, and A. Kiknadze, general director of the Gruzmorberegozashchita Scientific Production Association: "What Is Happening to the Seashore?"]

[Text] In the last 10 years more than half of the Georgian seashore--and it is more than 300 kilometers long--has suffered from erosion. This causes beaches to become smaller, and sometimes to even disappear altogether, it destroys the original contours of the shoreline and it damages the protective structures located in some cities and along the roadbed of railways. It takes huge capital investments to combat these disastrous processes, and the results are not always as good as anticipated.

Scientists established as early as the 1950's that the Black Sea coastline was made up of several natural dynamic systems. The common rule governing their functioning was that beach-forming material (sand, gravel, pebbles and detritus), entering the sea from numerous rivers, does not stay in one place but, under the effects of waves and storm currents, can be redistributed along the shore, forming so-called coastal deposits. Their annual "expenditure" on pebbled shores can reach 200,000 cubic meters a year. Wherever these deposits are retained, spacious beaches are formed. Wherever the speed of their movement is faster, beaches remain narrow. Quite often they are lost entirely, and then the shore suffers catastrophic damage.

Nature has acted efficiently in this area: Changing the contours of the coastline by means of accumulations of river drift and its redistribution by waves, at the beginning of the century it established a dynamic equilibrium in some sections, as if it were striking a balance between accumulated and lost deposits. River drift represents the credit side of this ledger. Expenditures must be charged to the sea. On the one hand, it pulverizes pebbles, while on the other it absorbs deposits from steep sections of the seabed and from the tops of underwater canyons. Wherever the shore has been intensively extended by deposits of river drift, it has fairly quickly reached the steep inclines of the tops of canyons, which absorb this drift. This offset generally takes place at a depth of 100 meters. The shore stops advancing.

There is also another process which prevents the growth of banks. Let us consider the sand and pebble bars that took thousands of years to form. They are gone. The bodies of water they guarded turned into lagoons, then into swamps and, finally, into dry lowlands. Pitsunda, Sukhumi and several other cities and settlements along the Black Sea coastline are such lowlands.

The stability of the shoreline is also disrupted by changes in solid river discharge. According to hydrologists, its quantity began to diminish in recent decades for various reasons. We also cannot ignore the fact that human interference has a negative effect on the seashore: Each year the irrigation of farmland requires more water, and the construction of dams can have serious consequences. Let us consider, for example, the dam built on the Inguri River. This river ceased to run through its old channel in 1979, when its mouth was moved 20 kilometers to the north. All of this has caused the Eris-Tskali section of the shore to recede approximately 10 meters a year.

The same is happening to the bank of the Rioni River. More than 40 years ago, the river was rechanneled 6 kilometers to the north. This deprived the seashore near the city of Poti of river drift and the shore began to recede rapidly. Although this is a slow process, it is still going on today.

Georgia's seashore began to be used for economic and resort purposes at the end of the last century. Poti Port was built and walls were erected to protect the railroad to Batumi from the effects of the surf. The southern breakwater of Poti Port turned out to be too close to the top of an underwater canyon. As a result of this, the water in the northern branch of the Rioni River, which had freely flowed along the coast, was crowded under the new conditions: Large quantities of drift began to accumulate in the canyon. Its summit gradually moved toward the shore, at a speed of 8 meters a year. The erection of vertical walls also had a ruinous effect on the beach of the Adzharskaya ASSR. After their erection, it began to grow smaller and gradually disappeared, and the walls themselves were broken by the waves. The construction of the breakwater at the mouth of the Zhoekvara is another example. It blocked the flow of drift which had previously come from the mouth of the Psou River. This eroded not only the beach but also the coastal park in the resort of Gagra.

After the Great Patriotic War, a period of intensive coastal development began in Georgia: Roads, settlements, sanatoriums and residential buildings were constructed. Pebbles and sand from the beach were used extensively in this construction. Nature reacted to this human activity quickly--more than half of the seashore began to disintegrate.

A question naturally arises: Is man capable of protecting the shore? And we are not referring simply to the protection of isolated sections, but of the entire coastline.

Studies conducted by republic scientists to judge the expediency of the construction of dikes, breakwaters and other such structures indicated that this is often accompanied by the abrupt disruption of the patterns of coastal currents, after which the system seeks new conditions for a balance, far away from these alien structures. Economic considerations have also been taken into account: The construction of dikes and similar structures costs the state too much: from 2 to 4 billion rubles

per running kilometer. All of this proves once again that in Georgia it is much more expedient to cover the "melting" beaches with land fill. The expense of this operation is recouped fairly quickly. Inexpensive land fill can be derived from the earth excavated from the Gagra tunnel, the dirt from the Tkvarchel'skoye Coal Mine (for nothern Kolkhida) and the slag from the Zestafoni Ferroalloy Plant (for the Adzharskaya ASSR). Unlimited resources can be excavated from the empty channel of the lower reaches of the Inguri River. This new method of coastal protection is unavoidable for us. The experience of recent decades has shown us that concrete hydraulic engineering structures are not only extremely costly to build, but are also short-lived: A loose or muddy foundation deforms them, leaving only a skeleton of concrete fragments, and the situation on the shore becomes much more serious than it was prior to their erection.

The reinforcement of the coastline has mainly been the concern of the Georgian SSR Ministry of Housing and Municipal Services and the Transcaucasian Railway Administration. This has given rise to difficulties because protective measures were taken only within the areas of their jurisdiction. This had a negative effect on the stability of adjacent coastal regions, which were either under the jurisdiction of other departments or were the sites of future resorts planned by the Gruzgiprogorstroy Institute. This conclusion was drawn as early as 1975, after the actual state of affairs had been analyzed in depth. As a result, the institute, the Georgian SSR Council of Trade Unions and the republic Ministry of Housing and Municipal Services worked with scientists, project planners and builders to substantiate the need for a single republic agency of interdepartmental jurisdiction, the functions of which would include the implementation of a group of measures pertaining to the entire cycle of "science-production" operations.

The protection of the Black Sea shore is also a matter of great concern to directive agencies. A special scientific production association, Gruzmorberegozashchita, has been established. It unites several subdivisions--scientific, project planning, construction and repair-maintenance organizations. The scientific link has been assigned special functions: Scientists are expected not only to observe, study, model and make practical recommendations, but also to take the role of client in relations with other organizations making up the association.

The section of the CPSU Central Committee's draft report to the 26th party congress pertaining to the economic and social development of union republics and, in particular, the Georgian SSR, stresses the need for coastline reinforcement operations on the Black Sea shore. In connection with the establishment of this new scientific production association, we feel that some additions should be made to this section of the draft. The words about the need for coastal reinforcement operations on the Black Sea shore should be supplemented with the following phrase--"with reliance on the activities of the scientific-production association." This will considerably heighten the responsibility of all association subdivisions in the future.

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CLEAN AIR CONTROL DISCUSSED IN MINSK

Minsk SOVETSKAYA BELORUSSIYA in Russian 19 Feb 81 pp 2-3

[Report by I. Seredich, special correspondent, on open discussion of clean air control organized by SOVETSKAYA BELORUSSIYA editors: "Clean Air for Minsk"]

[Text] How long can a person live without food? Around five weeks. Without water? Four or five days. But without air? At most, only five minutes. A person needs air from the first moment of his life to the last. And not polluted air, but clean and fresh air.

The protection of the atmosphere is one of our most important scientific, technical and social objectives. It is particularly important now, at this time of rapidly developing industry, transportation and agriculture and of urban growth. The protection of the air is one of the chief concerns of the Soviet State. The need for a healthier environment is stipulated in the Constitution of the USSR and in the draft report of the CPSU Central Committee to the 26th party congress. A union law "On the Protection of the Atmosphere," passed at the third session of the nation's Supreme Soviet, went into effect on 1 January 1981.

The editors of SOVETSKAYA BELORUSSIYA receive many letters requesting discussions of the state of the air in Minsk, the capital of our republic, and measures to combat air pollution. The writers of these letters ask specific questions and raise problems connected with the improvement of atmospheric protection. In answer to the requests of many readers, the editors of SOVETSKAYA BELORUSSIYA organized an open letter hour in the tractor plant workers' Palace of Culture to discuss the topic "Clean Air for Minsk." The discussion was attended by officials from the ispolkom of the Minsk city soviet of people's deputies, the Belorussian Administration for Meteorology and Environmental Control, the Belorussian Regional Inspection for the Supervision of the Operation of Gas Scrubbers and Dust Traps, sanitary and epidemiological stations, the Minskzelenstroy Administration and the State Automobile Inspection, scientists, administrators and specialists from a number of industrial and motor transport enterprises and many readers of our newspaper.

What Are Our Plants 'Exhaling'?

Industry is one source of air pollution. The substances emitted during the production of, for example, a ton of iron castings include from 10 to 50 kilograms of dust, 150 to 330 kilograms of carbon monoxide and 0.8 to 1.5 kilograms of sulfuric oxide. Many other technological processes also produce amazing quantities of harmful substances!

What has been done and is being done to reduce the pollution of the air by the city's industrial enterprises? Many readers ask this question in their letters to the editors. In response to this question, Deputy Chairman I. Shkrebnev of the ispolkom of the Minsk City Soviet of People's Deputies said, in part:

"All enterprises and organizations have planned measures to protect the atmosphere and have drawn up scientific substantiated plans for work under unfavorable weather conditions. The process of categorizing and classifying emissions is in its final stage.

"New dust traps and gas scrubbers of a better design are being acquired and existing ones are being remodeled. Systems for complete combustion and rapid cupola scrubbing have been installed, for example, by the Minskstroymaterialy Production Association, and this has considerably reduced the content of harmful substances in sanitary protective zones. Hydraulic dust extractors have been installed and are now operating in the ceramic tile shop, and the installation of a sprinkler system has begun in Branch No 1, which will exclude the possibility of the sudden discharge of waste.

"At the tractor plant, systems have been incorporated for the complete combustion of solvent fumes in the cab shop and the pressing division. At the Plant imeni Vavilov, old painting compartments have been replaced with the new cagelike type, which is easier to clean. This reduces emissions of paint aerosols into the atmosphere. New dust extractors have been installed in two shops."

Question: We know that from 60 to 90 percent of all exhaust gases, sulfuric oxide, nitrous oxide and highly dispersed dust are produced during the smelting of metals. What are the latest suggestions regarding ways of purifying smelter exhaust?

Response by L. Rovin, senior researcher at the Belorussian Polytechnical Institute and candidate of technical sciences:

"Research associates at the branch scientific research laboratory on the purification of foundry exhaust have designed a better dust catcher for cupolas. It is approximately three times as effective as the traditional wet spark extinguishers, and ten times as effective as dry ones. The inhabitants of neighborhoods near the machine tool plants imeni Kirov and imeni Oktyabr'skaya Revolyutsiya, the experimental machine plants of the Belorussian SSR Ministry of the Construction Industry and the Belorussian SSR Ministry of the Construction Materials Industry and others have surely noticed that the grayish-brown smoke billowing from cupola chimneys has been replaced by white steam. Minsk has therefore become the first large city in which all of the dry, less effective extinguishers have been replaced.

"The establishment of the nation's first system for the precision cleaning of emissions from the block of cupolas and electric furnaces at the Minsk Motor Vehicle Plant can be regarded as a great achievement."

Question: The transfer of enterprises with harmful production to locations outside the city limits or outside residential districts plays an important role in the improvement of city air. What will be done in this area in the near future?

Response by I. Shkrebnev, deputy chairman of the ispolkom of the Minsk City Soviet of People's Deputies:

"Mirror factories will be transferred to other production sites. Part of the experimental furniture plant will 'move' to Uzdenskiy Rayon. The plastics plant will soon be moved out of the residential zone."

Question: Boilers are another source of air pollution. What measures are being taken to reduce their quantity?

"In recent years," I. Shkrebnev said, "ten small boiler factories have been closed in Minsk, and around 1,800 individual residences have been equipped with a gas supply."

There is no question that much has been done and is now being done in the city to reduce the pollution of the atmosphere by industrial waste. Nevertheless, shortcomings and omissions are still encountered. These were quite pointedly discussed during the open letter hour. In response to the questions of our readers, A. Shalushkov, chief of the Belorussian Regional Inspection for the Supervision of the Operation of Dust Traps and Gas Scrubbers, said, for example:

"More than 2,000 pieces of purification equipment are now being operated at city enterprises. Most of them are designed to trap dust. However, devices for the decontamination and utilization of ventilation exhaust, containing carbon monoxide, nitrous oxide, phenol, solvent fumes, acid mist, alkali, metallic oxide and other harmful substances, are hardly being used at all.

"The construction of closed cupolas with units for the decontamination of exhaust, which are supposed to replace the existing cupolas at the Automatic Flowline Plant imeni P. M. Masherov, is progressing too slowly. At the gypsum and plaster plant, the need to remodel existing electric filters is being ignored.

"Deputy Chairman I. Shkrebnev of the gorispolkom said that systems for the complete combustion of fumes had been incorporated at the tractor plant. In my opinion, however, the administrators of this huge enterprise also warrant serious criticism. They have not given enough attention to environmental protection issues. Although they have 12 cupolas, they are obviously in no hurry to incorporate systems for the ultra-fine purification of cupola gas. This also applies in full to the administrators of the heating equipment plant and a number of other enterprises."

From the Statement by A. Kondrusev, Chief Physician at the City Sanitary and Epidemiological Station:

"The present efforts to prevent emissions of harmful substances into the atmosphere at the heating equipment plant are extremely unsatisfactory. Only 46 of the 65

sources of air pollution have been equipped with cleaning units, although the enterprise pollutes the atmosphere within a radius of 2,000 meters.

"The identification and classification of emissions have still not been completed at the Leather Goods Factory imeni Kuybyshev. Sanitary protective zones have not been designed and built at the motor vehicle and spring plants.

"The problem of collecting, temporarily storing and utilizing toxic production waste has not been solved as yet either."

Minsk is a large industrial center. For this reason, the development of the production units of plants, factories and other enterprises must be closely coordinated with environmental protection objectives. The situation was absolutely unacceptable, for example, last summer, when many of the scrubbers and dust traps were in disrepair at the motor vehicle and tractor plants, as well as the silica and large-panel residential construction combines, the machine tool plants imeni Kirov and imeni Oktyabr'skaya Revolyutsiya and the heating equipment plant.

Departmental laboratories are being set up too slowly in the city to monitor the condition of the atmosphere on industrial sites and in sanitary protective zones. Subunits of this kind are now operating at only eight enterprises. What is more, their jurisdiction has not been correctly defined everywhere. At the refrigerator plant, for example, the atmospheric control group is under the jurisdiction of the chief power engineer, who is responsible for the installation, adjustment and operation of ventilation systems and purification equipment. In these cases, the possibility of an overly subjective approach to the appraisal of laboratory data cannot be excluded.

And what is the status of the previously mentioned branch scientific research laboratory on foundry exhaust purification (which is, incidentally, the only one of its kind in our nation)? As a result of negligence on the part of the administrators of the Belorussian Polytechnical Institute, the Ministry of Higher and Secondary and Specialized Education and municipal organs, it has not only failed to broaden its activities in recent years, but has, on the contrary, limited them. The thought of closing down this laboratory should not even be entertained, as the need for this kind of scientific center is self-evident.

Conclusions Drawn from the Letters of Readers and the Statements by Participants in the Open Letter Hour:

The rapid development of industry in the city of Minsk has been accompanied by insufficient concern for the protection of the atmosphere against pollution by the harmful emissions of enterprises. The gorispolkom and other monitoring agencies must make stricter demands on the administrators of plants and factories for the completion of all planned environmental protection measures.

The Motor Vehicle and the City

From a Letter to the Editors:

Motor transport is responsible for around half of the harmful emissions in the atmosphere. A thousand vehicles will emit more than 3,200 kilograms of carbon

monoxide, 200-400 kilograms of other gaseous products and 50-150 kilograms of nitrogen-containing compounds in a day. On a 100-kilometer trip, a motor vehicle uses as much oxygen as a human needs to live on for a year.

The number of motor vehicles in the republic capital rises with each year. The number of privately owned passenger vehicles will rise, for example, from 52,000 to 64,000-70,000 during the years of the 11th Five-Year Plan, and the growth rate of freight traffic will be 30 percent.

Will this put more gas in the city streets and squares and have a negative effect on the atmosphere? Many readers ask this question in their letters. The editors requested personnel of the municipal GAI [state automobile inspection] and the chief of the transport division of the gorispolkom, V. Bogdanov, to respond to this question. The common opinion was that the quantity of harmful substances emitted by motor transport should not increase.

"Is it possible that vehicles with diesel and carburetor engines will soon be replaced by electric vehicles?" Minsk resident N. Ivashkevich asked during the open letter hour.

In a number of cities, V. Bogdanov said, electric cars are already being used but only in small quantities, because they are still being tested. It would be difficult to say when their mass production might begin. For this reason, it is too early to speak of electric vehicles in Minsk.

In Moscow and some other large cities with gas filling stations, bottle-gas driven freight vehicles have been used for a number of years now, and this has reduced the toxicity of exhaust gases to from one-third to one-fifth of the previous level. Apparently, motor transport in Minsk will also begin using liquefied gas at some time in the future. But this will not completely solve the problem of gas pollution. More attention is now being paid to the development of electric transport in the city. Soon the construction of a streetcar line will begin in the Serebryanka neighborhood. The subway construction project is being carried out intensively. According to the plan, the first section should begin operating by the end of 1984, but subway builders have pledged to complete this assignment a year ahead of schedule.

Question: The pollution of the environment and the atmosphere with the exhaust of motor transport could be reduced by improving the technical condition of vehicles. What is being done in this area?

Response by Chief F. Tupitsa of the technical investigation division of the Minsk State Automobile Inspection:

"The personnel of the GAI are doing much to monitor the technical state of motor transport. A diagnostic station, equipped with the latest devices to monitor the composition of motor vehicle exhaust, has been built and is operating.

"Economic units with 200 or more vehicles are setting up their own diagnostic lines and stations for monitoring the content of harmful substances in vehicle exhaust."

Prior to the open letter hour, the editors of SOVETSKAYA BELORUSSIYA showed GAI personnel letters stating that a number of motor transport enterprises are not paying enough attention to the need to improve the technical condition of vehicles. An inspection proved that the readers' complaints were justified. The technical maintenance of vehicles is particularly unsatisfactory in the bus transport administration, the Ministry of Trade and Motor Transport and the vehicle enterprises of the Belorussian SSR Ministry of Industrial Construction.

From a Letter to the Editors:

The quantity of harmful substances also depends on the speed with which the vehicle is traveling, and this, in turn, depends on traffic regulation. Now that a subway is being built in Minsk and many sections of the center of the city are closed to traffic, the correct organization of freight traffic is especially important.

"At present," F. Tupitsa said in his report, "the city has three systems for the regulation of traffic, and a fourth is being completed. What is being designed is the most effective system of traffic control under present conditions--the 'City--Ya!' automated traffic control system--and the plan calls for it to be completed in 1982.

"In order to eliminate through traffic from the central part of the city and to reduce gas pollution, its streets will be closed to freight vehicles."

Traffic service personnel were asked many questions during the open letter hour. And this is understandable: The state of the city's air depends to a considerable degree on their work, although we must frankly say that they do not have the means to solve many problems. In spite of the steps they have taken, the level of gas pollution in the air is still high in the center of Minsk. The main reason is that the parking problem has not been solved. All large vehicle enterprises (with the exception of Vehicle Combine No 5) are located in the center of the city or in densely populated regions. The gorispolkom must take steps to correct this.

There has been so much discussion about garages and parking spaces for private motorized vehicles! Unfortunately, only 60 percent of the owners of motor vehicles have garages or parking spaces. This is why many Zhiguli, Moskvich and Zaporozhets cars are parked right under the windows of buildings, in courtyards and on the streets. Sometimes you can see one driver repairing his car, another warming up the engine and still another changing his oil.... Given the present parking problem, this undoubtedly inflicts tremendous damage on the environment.

Green Questions for the Capital

According to union standards, there should be 15-16 square meters of [illegible] land for each urban inhabitant. How much greenery has been [illegible] each Minsk resident?

To answer [illegible], chief of the Minskzelenstroy Administration:

[illegible] of 7.9 square meters...

Of course, there is an acute shortage of greenery in our city. But after all, it serves as an excellent filter to purify the air of pollutants. The taiga [illegible] a single hectare traps from 32 to 63 tons of dust a year. Vegetation is the main source of oxygen. A hectare of trees absorbs around 7 tons of carbon

over the space of a year and enriches more than 10 billion cubic meters of air with oxygen.

"It has been established that greenery improves the atmosphere. Whereas a cubic meter of air in the center of a large city contains up to 5,000 microbes, the same quantity of air in a park contains only 400-500.

"It is therefore understandable that readers should be disturbed by the fact that the development of Minsk's greenery is not keeping up with the growth of construction volumes. This problem could be solved, as speakers pointed out during the open letter hour, through the joint efforts of the Minskzelenstroy Production Administration, enterprises, establishments and the public in the city.

"But what is actually taking place? Back in 1972, a session of the city soviet of people's deputies approved the 'Rules Governing the Protection of Greenery and the Maintenance and Use of Squares, Parks and Boulevards in the City of Minsk.' The administrators of enterprises, establishments and academic institutions, supervisors of housing and municipal service departments and offices and administrators of buildings with landscaped grounds must, in accordance with these rules, deter people from breaking trees and shrubs and trampling lawns and flower beds. But they do not always do this. In many cases, the territory under their so-called jurisdiction resembles a wasteland."

The Opinion of Participants in the Open Letter Hour:

Administrators of enterprises, academic institutions and establishments should be held just as strictly responsible for the landscaping of their grounds as for the performance of their main duties.

A third of the funds allocated annually for landscaping, it turns out, is used to restore previously destroyed greenery. Is this not a large amount? Of course it is. And the landscapers themselves are largely to blame, as many letters from readers confirm. Here is one of them:

"It is believed that a tree with a larger top will have more leaves and, consequently, will produce more oxygen. It seems that this should be taken into account when trees are pruned. Unfortunately, trees are now pruned in such a way that only the trunks are left. This is done indiscriminately--they prune the branches that present an obstacle and the ones that are not bothering anyone or anything. Tall poplars and other trees, for instance, once grew near the stadium on the grounds of the polytechnical tekhnikum. After they were pruned, they looked more like poles than trees. Many of them are completely withered."

Here is another example. A few years ago, the poplars were removed from Tolbukhin boulevard (they supposedly posed a problem for municipal transport during the blooming season). Linden trees were soon planted in their place. But less than half a year later, the lindens were lifted and moved to another location. It seems that they were interfering with the laying of pipelines.

As speakers pointed out during the open letter discussion, builders, communication workers and personnel of the heating network, who lay various underground lines, do not always treat vegetation with care.

Each year 800,000 cubic meters of chernozem is brought into the city for the restoration of lawns. The soil has to be changed because of heavy salinization. This costs, as they say, a pretty penny--the cost per hectare is around 12,000 rubles. We also should not forget that poisoned soil will not yield anything for many years. And think of how much valuable vegetation is ruined each year! Is it more convenient to carry snow out of the city efficiently or to periodically sprinkle the streets with a mixture of sand and salt and then remove it and replace the top soil on all lawns in the spring? This question was pointedly raised by participants in the discussion and the editors hope to receive a complete explanation from the organizations concerned.

Air ceased to be a freely available resource long ago. A large industrial city can only have clean air if it carries out a large group of conservation measures. They must be carried out intelligently and in good time.

This opinion was quite apparent in all of the statements by participants in the open letter hour to discuss the topic "Clean Air for Minsk."

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MESOLONGION AREA RESIDENTS OPPOSE NEW PETROCHEMICAL PLANT

Athens ELEVTHEROTYPIA in Greek 18 Mar 81 p 7

[Article by Giorgos Vidalis: "Petrochemicals Will Not Happen Here!"]

[Text] The establishment of a petrochemical industry at Kotsilari, Mesolongion, which was announced by the government, has stirred up the inhabitants in the surrounding villages of Neokhori, Katokhi and Mouria. Petrochemical wastes threaten to destroy perhaps the most fertile plain in Greece (160,000 stremmas) and kill the famous lagoon which provides three million kilos of fish a year to the domestic market.

Last Friday, 13 March, there was a meeting in Neokhori, the largest village in the area, initiated by government agents (the ministers of justice and interior, Stamatis and Stratos, are elected in Aitoloakarnania) in order to reassure and persuade the villagers about the "good and beneficial" things they will have from establishment of the plant. The nomarch of the nome, Thanopoulos, invited representatives from ELEVME (the Greek Industrial and Mining Investments Company is a state company and has undertaken establishment of the petrochemical plant), as well as officials from the ministries of industry and coordination.

On their side, the residents invited university professors, an ecologist, a TEE [Technical Chamber of Greece] representative, an ichthyologist and other professionals.

The signs which had been put up in the village, like "ELEVME, Get Out," "Petrochemicals=Death," and "Sevezo and Cagliari Will Not Happen Here," and the crowd which suffocatingly filled the movie theater where the meeting took place, showed the anger and combativeness of the area's residents.

The following emerged from the marathon meeting:

1. The inhabitants have never been briefed, nor has their opinion been asked, about the plant's establishment. Moreover, the decision of the town council which rejects establishment of petrochemicals was ignored.

2. There has been no regional planning study of the area as is provided by Law 360 on regional planning.

3. The issue of spawning, that is reproduction of the fish in the lagoon, is serious and is endangered by pollution of the waters.

4. The thousands of birds on the plain, as well as the rare phenomenon of the existence of wild horses and cows in this locale, will be destroyed by pollution.

Work Preference

The residents are not opposed to industrialization. But what are needed are industries concerned with the agricultural products which they produce, not industries which will wipe them out.

There is no unemployment, so they do not have to resort to taking work in petrochemicals, since the area is one of the richest that exist. ("Bring Congolese to work," shouted a Neokhori inhabitant when an ELEVME representative said that we will give preference to you and take workers from you.)

Earth and Sea Support

The creation of the petrochemical plant is economically unprofitable, as appears in a letter which had been sent in 1979 by academian and former administrator of the National Bank A. Khristodoulou to Karamanlis. In the letter Khristodoulou reports that this industry will cost, in its final phase, 860 million dollars and, during the first eight years it will have a loss of 52 million dollars.

The speakers who were present on the government side were ELEVME directors Liarandonakis, Kardamakis and Lekkas and, from the ministries of industry and coordination, Kardasis and Loukidis. Those invited by the village were: the dean of the agricultural college, Kougeas; The president of the TEE of western Greece, Papanikas; Professor Papamandelos from the University of Patra with his colleague, Barakos; professor of regional planning Tritsis; biologist and ecologist Pergandis; ichthyologist Karpiris; and, on the part of the Association of Chemical Engineers, Karakhalios.

The dean of the agricultural college, Kougeas, stressed that "the products which the earth and sea give are never exhausted. Men will live with these resources always, if they do not destroy them." The dean denied that ethylene is not toxic, as ELEVME representative Lekkas had previously maintained.

The statements made by the men from ELEVME, that the specifications on environmental pollution will be observed, that the residents' income will rise, that the factory is a state enterprise and belongs to the people ("Like DEI [Public Power Corporation]?" shouted a listener) did not echo persuasively in the residents' ears. In fact, many times those gathered hissed the state agents and it was necessary for the nomarch who was "coordinator" of the meeting to call things to order, as far as he could.

The last word was had by T. Makris, president of the agricultural association, who said characteristically: "They have made their decision and we have made ours. Neokhori will take fate into its hands. Petrochemicals will not happen."

As the inhabitants maintain, and as we verified, the current of the Akheloos River which flows into the sea heads for the lagoon. The plant's sewerage which will be cast into the sea will be carried away by the Akheloos' flow. The entrance to the first fishery is only two kilometers from the place where the petrochemicals will be produced.

As the villagers told us, the wind blows northeast, that is toward Mesolongion.

Not only is the rich aquatic area with its plentiful fish (mullet, sea bass, porgy) in danger, however. The fertile plain measuring 160,000 stremmas which we saw spread before us on a knoll is in danger of becoming a "graveyard." This gold-bearing field makes an output of two billion drachmas a year. Citrus fruits, corn, Kalamai-type olives, cotton and clover (the latter covers two-thirds of Greek production) are cultivated in this area.

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April 27, 1981